

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 759.—VOL. XX.]

London, Saturday, March 9, 1850.

[PRICE 6D.

VALUABLE STOCK OF MINE MACHINERY AND MATERIALS, in the parish of ST. NEOT, in the county of CORNWALL.

MR. MURRAY will SELL, BY PUBLIC AUCTION, on Monday and Tuesday, the 18th and 19th days of March, 1850, by One o'clock in the afternoon of each day precisely, at HOBB'S HILL MINE, in the parish of ST. NEOT, in the county of CORNWALL, all the

MINING MATERIALS THEREON:

Comprising an excellent WATER WHEEL, 46 feet diameter, 4 feet abreast, with cast-iron axle and sockets, cranks, &c., employed as a pumping engine; 1 excellent single-acting cast-iron drawing machine, attached to and worked by the aforesaid wheel, 1 excellent water wheel, 24 feet diameter, 3 ft. 8 in. abreast, with cast-iron axle and sockets, with 3 cranks and 2 cast-iron multiplying wheels, with 12 heads of stamps complete, and a small wood drawing machine attached thereto, and about 50 fathoms of 4-inch chains of the best quality iron; also, 1 water-wheel, 22 feet diameter, 3 ft. 6 in. abreast, with 2 cranks, and frame-work for 12 heads of stamps, and oak axle, provided with iron caps (this wheel is already taken abroad); about 40 fathoms of 7-inch pumps, in all drawing lifts, including 5 6-inch working pieces, 3 door pieces, and 3 windows, with all requisite pitwork to match, a small capstan rope, of the best quality (from China), nearly new, about 85 fathoms of 4-inch flat whale-rope, of the best quality (from China), nearly new, and about 75 fathoms of ditto, 3 whale kibbles, 1 whale ditto, with windlass rope, 1 iron train wagon, 1 wood ditto, smithy bellows, anvil and vice, taps and plates, screw stock, &c., and a variety of smelters' and miners' tools, carpenters' bench, miners' and carriers' chests, kievers, and other materials necessary for tin dressing, a quantity of new and old wrought and cast-iron, ironmongery, &c., scales and weights, a quantity of rope, grinding stone, and frame, about 60 fathoms of large laundry, a large quantity of first-rate timber, with a variety of miscellaneous property suitable for mining purposes.

The attention of mine agents, mechanics, farmers, and the public generally, is particularly invited to the above, as most of the materials are nearly new, of the best quality, and in excellent condition.

Refreshments will be on the Table at Twelve o'clock.

All persons having any demands on the above mine are requested immediately to send the particulars to the purser, Mr. R. Clegg.

MONEY TO LEND—the sum of £500, to be divided in small sums.—Apply to the auctioneer.

Dated Castle Villa, Liskeard, Auction and Mining Offices, March 1, 1850.

SPARE MINING MATERIALS AND OLD WROUGHT AND CAST-IRON FOR SALE.

MR. W. PENBERTH will SELL, BY PUBLIC AUCTION, on Tuesday, the 19th inst., at Twelve o'clock at noon, at WHEAL VOR MINE, in the parish of BREAGE, CORNWALL, the following

MINING MATERIALS—VIZ.:

1 80-inch PUMPING ENGINE, with or without boilers.
1 49-inch ditto
1 18-inch CAST-IRON STAMPS AXLE AND FITTINGS.

Workings, door and H-pieces, cases, with sliding-boxes and glands, complete, from 12-inch to 19-inch bore, plunger valves, from 12-inch to 16-inch diameter, lagged rod and cap plates, staves and glands, and iron and brass buckets, and prongs in great variety; a 12-inch marine dial (by Jordan) and stand, a telescope, spirit level and stand, an 18-inch dial timerpiece and case, several engine counters and boxes, and a great quantity of BEAMS and OLD CAST AND WROUGHT-IRON.

The MATERIALS AT WHEAL VOR are DAILY ON SALE by private contract, and will continue to be up to the time of sale by auction; and afterwards, for those remaining unsold, application to be made to Capt. R. Blight, Jun.

Dated March 6, 1850.

TO IRON AND COALMASTERS AND OTHERS.

TO BE LET, for a term of 21 years, at reasonable royalties, the GARDEN HALL COLLIERY, situate in the parish of RUABON, in the county of DENBIGH, in the immediate vicinity of the Shrewsbury and Chester Railway, to which there is a branch or tramway from the works. This valuable mineral field consists of 80 acres, and contains the following seams of coal—viz.: 1-yard Coal, 5-foot Coal, 6-foot Coal, 8-feet or Main Coal, 3-feet Brassy Coal, Upper Yard Coal, 2-feet Red Coal, 24-feet Stone Coal, 3-feet Nant Coal, Lower Yard Coal, 3-feet Wall and Bench Coal, and Upper and Lower Half-yard Coals.

Also, BEDS OF IRONSTONE, of good per centage, connected with the Main Coal, Stone Coal, Upper Yard Coal, Wall and Bench Wall Coal, and Upper and Lower Half-yard Coals. It also contains Fire-brick Clay, Potters' Clay, Freestone and Sand of the best qualities, and the whole of these seams of coal and ironstones, with the exception of a portion of the 5-foot coal, is unworked.

The several descriptions of coal above enumerated are extensively used as house coal and in the manufacture of iron, and the Yard, Wall and Bench and Stone Coal, are celebrated for their excellence for household purposes, and for making coke for locomotive engines. There are two steam-engines and other machinery erected upon the premises which the tenant may purchase at a valuation, and several pits are already sunk to within a few yards of the Main Coal, and there is every facility for carrying on a large and profitable Sale Colliery, independent of the advantages to be derived from the manufacture of iron, and the proximity of the Shrewsbury and Chester Railway for the removal of the produce.

Full particulars may be had, and a plan and section of the stratification seen, on application to Mr. Humphreys Jones, Willow House, Wrexham.

MINERALS ON LEASE.

TO BE LET, BY PROPOSAL, for a term of years, with immediate entry, the MINERALS OF IRON ORE AND IRON STONE, under the name of FRIZINGTON PARKS, in the parish of ARLECDON, in the county of CUMBERLAND, the property of the Baroness de Sternberg, distant about 5 miles from Whitehaven. These minerals were worked in the years 1838, 1839, 1840, and 1841, and upwards of 16,000 tons of excellent "Cumberland Red Ore" were then extracted within a small compass.

Mr. Joseph Wright, the tenant, at Parks, will show the estate and former workings; and further particulars may be known on application to Messrs. Armitstead and Brockbank, solicitors, 42, Queen-street, Whitehaven, by whom proposals in writing will be received until Thursday, the 21st of March inst., when the tenant will be declared at Two o'clock in the afternoon.—Whitehaven, March 1, 1850.

VALUABLE INVESTMENT.—The COEDCAE COAL

AND COKE COMPANY are desirous of having a PARTNER in one of the MOST ADVANTAGEOUS COLLIERIES IN SOUTH WALES, which is situated within 14 miles of the port town of Cardiff, to which place it is conveyed by the Taff Vale Railway, a branch of which extends to the colliery. They are at present in a position to work 100 tons of coal daily, which is of a very superior quality, and adapted for household use and also for coking. No. 1 vein is worked by level. There are also six new coking ovens in daily work, 18x12x54, together with a newly-erected horizontal engine of high-pressure, for the purpose of sinking to the Cymmer vein. No. 3 is the Dinas vein, so celebrated for coking. The engine, machinery, and plant are in excellent repair.

The above will be found a most advantageous opportunity for investing capital, as the demand for the coal is extensive, and it is highly esteemed in the market in coal and coke.

For particulars apply to Mr. Jos. Phillips, agent, Coedcae Colliery, Pontypridd, near Cardiff.—March 4, 1850.

UNSTON IRON WORKS, NEAR SHEFFIELD.—

Messrs. RANGELEY, WRIGHT, and Co. invite the attention of IRON MANUFACTURERS, IRON FOUNDERS, &c., to their DERBYSHIRE PIG-IRON (smelted entirely with coke), which they can with confidence recommend for all purposes where purity of metal, combined with tenacity or strength, is an object. Their No. 3 pig-iron is sufficiently fluid for all descriptions of founders' work. PIPING made from this quality will admit of almost any amount of hydraulic pressure. As a mixture with tender irons, or for purposes requiring great strength, their No. 4 is particularly adapted.

FORGE PURPOSES, the loss from waste in cinder, &c., is much below the usual average, and the product a very superior iron.

Messrs. E. W., and Co. also beg to inform RAILWAY CONTRACTORS, ENGINEERS, GAS and WATER-WORKS COMPANIES, BUILDERS, MILLWRIGHTS, &c., that having purchased an extensive assortment of models and apparatus from Messrs. Wm. Graham and Co., of Milton Iron-works (who have declined business), and having engaged experienced workmen from that establishment, they are in a position to furnish ALL DESCRIPTIONS OF CASTINGS, suitable for the above branches, and at moderate prices.

EAST WHEAL GEORGE MINE.—At an adjourned Meeting of the adventurers, held at the Queen's Arms Tavern, Cheshire, on Tuesday, the 30th day of February, 1850.

W. E. D. CUMMING, Esq., in the chair.

The minutes of the preceding meeting were read, and the list of adventurers laid upon the table.

The several cost-sheets having been examined, were approved, and ordered to be entered in the Cost-book.

Resolved.—That the meetings of adventurers be held on the second Tuesday in every alternate month, the next being held in April.

Resolved.—That the thanks of the meeting be given to Henry English, Esq., for the services rendered by him, as also for his offer of superintending the accounts and correspondence of the mine, free from any charge.

Resolved.—That this meeting do adjourn until the 9th of April.

W. E. D. CUMMING, Chairman.

The thanks of the meeting were given to the chairman. H. ENGLISH, Hon. Sec.

THE MINING ALMANACK for 1850: compiled and arranged by HENRY ENGLISH, Mining Engineer, &c. Under the especial sanction and patronage of H.R.H. PRINCE ALBERT, Lord Warden of the Stannaries, Chief Steward of the Duchy of Cornwall, Devon, &c.—THE SECOND VOLUME will appear early in MARCH next, with ADDITIONAL TABLES and STATISTICS, connected with the Mining Interests.—Names of subscribers are requested to be addressed to Mr. H. English, 28, Fleet-street.

STEAM TO INDIA AND CHINA, VIA EGYPT.—Regular MONTHLY MAIL (steam conveyance) for PASSENGERS and LIGHT GOODS to CEYLON, MADRAS, CALCUTTA, PENANG, SINGAPORE, and HONG-KONG.

THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY BOOK PASSENGERS and RECEIVE GOODS and PARCELS for the ABOVE PORTS by their steamers—starting from Southampton on the 20th of every month; and from Suez on or about the 10th of the month.

BOMBAY.—Passengers for Bombay can proceed by this company's steamers of the 29th of the month, to Malta, thence to Alexandria by her Majesty's steamers, and from Suez by the Honourable East India Company's steamers.

MEDITERRANEAN.—MALTA—On the 20th and 29th of every month. CONSTANTINOPLE—On the 29th of the month. ALEXANDRIA—On the 20th of the month.

SPAIN AND PORTUGAL.—Vigo, Oporto, Lisbon, Cadiz, and Gibraltar, on the 7th 17th, and 27th of the month.

For plans of the vessels, rates of passage-money, and to secure passages and ship cargo, apply at the company's offices, No. 122, Leadenhall-street, London; and 57, High-street, Southampton.

BANK OF AUSTRALASIA (Incorporated by Royal Charter, 1835), 8, Austinfriars.—The Court of Directors GRANT BILLS and LETTERS of CREDIT on the undermentioned branches—viz.: Sydney, Maitland, Melbourne, Geelong, Hobart-town, Launceston, and Adelaide, on terms which may be learnt on application, either at their offices, 8, Austinfriars, or at their bankers, Messrs. Smith, Payne, and Smith.

By order of the board. WM. MILLIKEN, Sec.

LOANS ON DEBENTURES.—THE CALEDONIAN RAILWAY COMPANY are prepared to RECEIVE TENDERS OF LOANS, in sums not less than £500.—Applications to be made or addressed to this office.

By order. D. RANKINE, Treasurer.

125, George-street, Edinburgh, Dec. 1, 1849.

PARSEY'S COMPRESSED AIR LOCOMOTIVES.—THE EXTRAORDINARY PUBLIC INTEREST excited some time ago by this invention, was sacrificed by a company being formed, which, having done nothing, is dissolved, having compromised with the inventor by paying law costs, compensation, delivering up all the machinery, and re-assigning the patents. THE INVENTION BEING FREE, attention is again solicited to it, as the BEST MEANS of IMPROVING and ECONOMISING the WORKING EXPENSES of RAILWAYS—an object at this time of the first importance. THE MODEL ENGINE may BE SEEN in ACTION on TUESDAYS and FRIDAYS, from Two to Four o'clock, and LICENSES GRANTED on application to Mr. Parsey, at 455, Oxford-street.

On Tuesday, March 12, in 1 vol. large 12mo., will be published,

RAILWAY ECONOMY: A TREATISE on the NEW ART of TRANSPORT—its Management, Prospects, and Relations, Commercial, Financial, and Social, with an Exposition of the Practical Results of the Railways in Operation in the United Kingdom, on the Continent, and in America.

BY DIONYSIUS LARDNER, D.C.L., &c. London : Taylor, Walton, and Maberly, 28, Upper Gower-street, and Ivy-lane, Paternoster-row.

PROGRESS OF SCIENCE.

NOW READY, price 5s., with a Portrait of Sir John Franklin.

YEAR-BOOK OF FACTS IN SCIENCE AND ART, for 1850—EXHIBITING the most important Discoveries and Improvements of the Past Year in all Branches of Science and the Arts.

By JOHN TIMBS, Editor of the Arcana of Science.

David Bogue, Fleet-street.

Will be ready for publication in a few days, MONEY VERSUS LIFE: A REVIEW OF COLLIEBVY CASUALTIES—showing their Nature and Extent—the Parsonage of Coalowners—the Concealment of Deaths in Mines—the Inaccuracy of Returns by Coroners—the necessity of Government Inspection, more Shefts, and adequate Provision for Widows and Orphans of the Victims to Explosion, &c.—with the means to provide for the same without unjust taxation; also showing the Clemency of Government towards the Coalowners of the North. By C. COLWELL.—Price 5s.

Simpkin and Marshall, London.

EXPANSION SLIDE GAEL.—THE ARTIZAN, for March, price 1s., contains Four Plates, and Articles on a New Method of Working with a Variable Expansion without a Separate Valve by J. Dugdale, Inspector of Machinery to the Board of Trade—How to Make Working Drawings, the cylinder, quarter size, and the air-pump bucket, half size—McConnel's Experiments on Railway Axles—Dimensions of various New Steam-motors—Designs for the Iron Founder—Abstracts of New Patents, and variety of intelligence interesting to the Mechanical man.—May be ordered of any book-seller; or will be sent free for 15 stamps, addressed to the Artisan Office, 69, Cornwallhill.

BELL'S NEW PATENT LIQUID CEMENT IS READY FOR USE, simple in its application, and only ONE-EIGHTH the cost of oil paint. For beauty it is pre-eminent over all other materials used on the fronts of houses, giving the exact appearance of fine cut stone; can be used at once on fresh Roman cement, or other plastering; is particularly calculated for country houses, villas, or gate entrances, that have become soiled or dingy, which may be beautified in any weather at a trifling cost.—Sold in cases of one, two, or three cwt., at 8s., 15s., and 21s. each, casks inclusive.

BELL'S PATENT MINERAL PAINT, more permanent and not half the cost of any other paint; invaluable as a coating for all kinds of wood or metal work, roofing, felt, leaky roofs, spouts, gutters, doors, sheds, nailing, all kinds of out-door work; requires no preparation, and will dry in a few hours—Brilliant black, 2s.; rich brown, 2s. 9d. per gallon. Light colours proportionately cheap; and as they will keep for any length of time, well calculated for exportation.

G. BELL & Co., 2, Wellington-street, London.

COMBMARTIN AND NORTH DEVON LEAD AND SILVER SMELTING COMPANY.

REGISTERED UNDER THE TOTT-STOCK COMPANIES ACT.

THE SMELTING-WORKS of the above COMPANY are in ACTIVE OPERATION.—SAMPLES OF LEAD and SILVER ORES are requested to be forwarded to Captain Cornelius Bawden, Combmartin, near Bideford, North Devon.

Payment for ores by bill, at three months, or cash if required.

THOMAS L. WILLSHIRE, Secretary.

CARADON VALE MINE, SAINT IVE, NEAR LISKEARD, CORNWALL.

This mine is situated in the parish of SAINT IVE, near LISKEARD, CORNWALL, and was worked upon by several poor experienced miners a short time since, to develop that which they felt convinced existed there—viz., rich copper ore. They drove an adit 70 fms. to hill, and sunk a shaft 12 or 15 fms. under that adit to cut the lode, when to their dismay they were completely impeded by the large quantity of water issuing from the lode, they having only water-bars to draw up the same; sufficient was, however, seen to know that rich yellow and black copper ore existed against the cross-course. There are seven ledges, well defined, and carrying the most extraordinary gossans that can be seen, with rich peach, prian, felspar, and ochre, and every other qualification to convince miners that great riches exist beneath.

It is proposed that the mine be divided into 1536 shares, at FIVE SHILLINGS PER SHARE, being the first deposit, and the liability of each shareholder is not likely to exceed £4 per share, as it is not expected more than 2s. per share will be required. The calls, too, are moderately fixed, not to exceed 5s. per share every two months.

A large number of the shares are already taken up.

Application for the remainder may be made to Mr. Thomas Sanford, Exeter; Mr. John Stephens, St. Ives, Liskeard; Mr. Edward Buer, Exeter; Mr. James Timewell, Exeter; Mr. John Seymour, St. Cleer, Liskeard; and Mr. Henry Vatcher, Exeter.

To the Committee of Caradon Vale Mining Company.

GENTLEMEN.—I beg to state that I have visited this mine, and have much pleasure in offering you my observations thereon. I find that the lode is only opened on by a shod pit, where it presents most flattening appearance, being composed of very rich gossans, felspar, quartz, and beautiful white pyrite. The strata is a soft clay slate, and very common for mineral. I have not the least doubt but that this lode will be found productive when explored. No practical miners dispute the favourable appearance of the lode. There are several ledges farther north, but only one has yet been wrought on, and that only to a small extent; this lode is driven on about 15 fms. west, and about 8 fms. east from the adit, which came in about 9 fathoms from surface; the lode in the western end is about 4 feet wide; I consider it to be an extraordinary lode. I never saw one more promising at such a shallow level; it is composed of gossans, being impregnated with rich black oxide of copper, spots of yellow copper, blue peacock, felspar, and mandicite; it also carries a small floatan on the foot wall, a cross-course in the western end intersects the lode, and the backs are all covered over with copper greene, which indicates that the lode will prove very productive, both east and west of the cross-course. At a few fathoms deeper there is a shaft sunk about 14 fathoms under the adit, and a cross-cut driven, and the lode cut by means of a cross-course, which let down a great deal of water; and, from the want of machinery, the poor miners, who worked

Transactions of Scientific Bodies.

MEETINGS DURING THE ENSUING WEEK.

THIS DAY	Royal Botanic—Inner Circle, Regent's Park	5 P.M.
MONDAY	Geographical—3, Waterloo-place	7 P.M.
	Medical—3, Bolt-court, Fleet-street	8 P.M.
	South Devon Geological—Ashburton	11 A.M.
TUESDAY	Medical and Chirurgical—53, Berners-street	8 P.M.
	Civil Engineers—26, Great George-street	8 P.M.
	Zoological—11, Hanover-square	8 P.M.
	Syrie-Egyptian—71, Mortimer-street, Cavendish-square	7 P.M.
WEDNESDAY	Society of Arts—Adelphi	8 P.M.
	Geological—Somerset House	1 P.M.
	London Institution—Finsbury-circus	7 P.M.
	Graphic—Thatched House Tavern	8 P.M.
	Pharmaceutical—17, Bloomsbury-square	9 P.M.
	Ethnological—17, Saville-row	8 P.M.
	Literary Fund—23, Great Russell-street	2 P.M.
THURSDAY	Royal—Somerset-house	8 P.M.
	Antiquaries—Somerset-house	8 P.M.
	Royal Society of Literature—4, St. Martin's-place	7 P.M.
	Statistical—13, St. James's-square	3 P.M.
	Royal Institution—Albemarle-street	8 P.M.
SATURDAY	Asiatic—3, New Burlington-street	2 P.M.
	Westminster Medical—17, Saville-row	8 P.M.

ROYAL INSTITUTION.

MARCH 1.—THE DUKE OF NORTHUMBERLAND (President), in the chair.

Sir R. I. Murchison delivered an interesting lecture on "The Distribution of Gold Ore in the Crust and upon the Surface of the Globe," to one of the most numerous assemblies ever beheld in the theatre of this institution. The table was covered by specimens of gold ore, amongst which was a remarkably fine lump of ore, procured from California, upwards of 30 years since, for the Right Hon. Edward Ellice; the collection of Prof. Tennant; and the magnificent specimen belonging to Mr. Walls, weighing 6 lbs 8 oz. 14 dwt. 13 grs, said to be the largest and purest lump yet received from that country, and to which reference was made in the *Mining Journal* of the 19th Jan. last, in our report of a lecture on "California—its Produce and Prospects" delivered at the Society of Arts. Large maps of the world, detached maps of Russia, &c., and a magnificent chart of the world on Mercator's projection, chiefly taken from Erman, were hung up to illustrate the lecture; and from the latter we quickly inferred that the popular belief that gold belonged principally to the warm regions of the south was fallacious, from the fact therewith apparent that the greater mass of the precious ore by far was found to the north of the equator. Sir Roderick stated it to be an axiom that gold ore never occurs in any great quantity except under certain conditions or "Constants," which may be thus briefly explained to be where the ancient stratified rocks which constitute the backbones of continents, or great islands, have been penetrated and altered and crystallized by the intrusion of igneous or eruptive matter. The golden vein-stones which rise up from beneath have been carefully examined to a very considerable distance below the surface, and it has been ascertained that they invariably deteriorate in value—i.e., in the percentage of pure gold on the weight of ore—the deeper the search is made. All the rich portions are found near the surface; hence the powerful rubbing or attrition which that surface has undergone in ancient times, has, by grinding down the tops of mountains, carried away by far the greatest quantity of valuable ore, and distributed it in heaps of gravel and sand, in plateaux or in valleys. As an admirable, though familiar, illustration of this, Sir Roderick observed, that had the Hertfordshire or Surrey hills been crystalline or eruptive rocks, and not formed, as at present, of chalk, the gravel pits of Hyde-park and of Hampstead would have been the great gold mining ground of Middlesex and the adjacent counties, whilst the mud of the Thames would be surfeited only where small portions of gold had been washed by the waters from its ancient banks. The London gravel is of the same age as the detritus or rubbish of Siberia, which is so rich in ore, and also contains the mammoth and other great extinct fossil quadrupeds. Never has there been discovered in any more ancient conglomerate, and thence the learned lecturer inferred that gold was of a very recent date as respects geological history, though of great antiquity as respects the human race. Indeed, the accumulations on the flanks of the Ural mountains clearly proved that iron and copper were formed before gold. These Ural mountains and Siberia furnish more than half of all the gold produced throughout the world. From the Urals and the 25 districts of Siberia, in the region around the flourishing city of Krasnojarsk, of which one is 200 miles in length and 100 in breadth, where the metal is invariably found in the broken materials and debris above mentioned, nearly the value of 3,800,000l. in gold is annually derived. Precisely similar, geologically, are the chief backbones of the American continent, which also afford at intervals clustered collections of gold ore. It is right, however, to state a fact of financial importance, that California has not hitherto produced more than 1,500,000l. annually. The learned lecturer adverted to a remark, which seemed to amuse the audience not a little, made by Sir Robert Peel, when addressed a few years since by Sir Roderick on the probability of gold being found in Australia, that he hoped "We might not have too much of a good thing." The recent explorations of those intelligent and persevering American officers, Abert, Emory, and Peck, employed under General Kerney, proved that in all the long tract watered by the Rio del Norte, the Colorado, and the Gila, which had been, for the most part, long inhabited by civilized men, gold ore was known in two or three spots only, and then the real profit was derived from gold gravel.

Such would be the case in California; and Sir Roderick inveighed against what he might almost designate as the popular delusion, that all that region would prove equally productive of gold. Of course, his opinion was founded on the presumption that there be no deviation from the "Constants," which appeared, almost, as far as they had been determined, to be a law of Nature. As a proof that gold in a mine diminishes as the solid rock is perforated downwards, the authority of Colonel Colquhoun, R.A., long resident in Mexico, was cited to show that in Guadalupe y Calvo, vein-stones opened out by British enterprise, though at first productive, gradually declined in value, and became poor as the ore was sought for deeper, and finally became purely argenticiferous. The same was shown by Mr. Warington Smyth to be the case in the gold mines of Hungary. Long before the discovery was actually made, Sir Roderick had inferred, from the descriptions of the Australian rocks by Count Strzelecki, that certain ranges there contained gold; and now Mr. John Phillips, a Cornish miner, had actually found that gold ore was disseminated there over the surface throughout 300 square miles. The learned lecturer expressed an earnest hope that her Majesty's Government would soon take some step to fix and explain the law touching mines, royalties, &c., which was to be enforced in that and other gold-producing colonies. A brief historical sketch of the subject was given, in which it was stated that Job was a true and good geologist, when he said "There is a vein for the silver," and "the earth hath dust of gold." It would be in vain to assign any limit to the productive value of silver mines when science had been fully applied to them, as they increase in value as in depth, whereas gold diminishes as we descend to seek it. In terminating this most admirable discourse, all of which was received with approbation, the learned lecturer reminded his audience that if the precious ore had remained locked up in solid vein-stones, and there interlocked with other minerals, alloys, and stones, it would have been incalculably less accessible to man than it is now, when distributed as a separate and loose material along the sides of hills and slopes of valleys. "If, however," said Sir Roderick, in conclusion, "we allow ourselves to speculate on the moral effects of this golden shower, we must, I apprehend, admit, with an ancient historian (*Diodorus Siculus*, but no geologist), that gold is obtained with toil, retained with difficulty, creates everywhere anxiety, and in its use produces both pleasure and pain." The learned lecturer concluded his discourse amidst loud cheers.

INSTITUTION OF CIVIL ENGINEERS.

MARCH 5.—WILLIAM CUMMING, Esq. (President), in the Chair.

Before the business commenced, it was announced by the secretary, that an electric telegraphic despatch had been received, communicating the gratifying intelligence, that at 7 o'clock in the morning of Tuesday, three locomotive engines, and 22 loaded coal-waggons, weighing in all 300 tons, had passed through the Britannia tube, over the Menai Straits, with perfect safety, and very satisfactorily to Mr. R. Stephenson, the engineer.

The discussion was resumed on Mr. Taylor's system of street paving, and was extended to such a length as to preclude the reading of any paper. It was contended that a rigid and unyielding substratum had been tried by Mr. Telford many years since, and had been used with success in some parts of the City paving, up to the present time. The average duration of the pavement of the streets in the City was stated to be eight years, but that it was constantly subject to injury, from being moved by the water and gas companies. The pavement on London Bridge, by Sir John Rennie, was instances as a good, but expensive, example of the use of long narrow stones; and that by Mr. Walker, on Blackfriars Bridge, was quoted as another instance of the success that might be attained by great care in the preparation of the substratum, which was of concrete, and the stones of the pavement being laid with more than ordinary skill and care. The results in both cases were eminently successful, but it was allowed that such an expensive system, however beautiful, was not applicable to the ordinary streets.

It was admitted that, although the principal streets of the City and the main thoroughfares of the west and east ends were well attended to, yet it must be allowed, that the paving of the majority of the streets was not in a satisfactory state, and it was attributed, in a great degree, to the want of a definite system being adopted, there being too many authorities, in the shape of parish paving boards, each of which had a separate surveyor, too often equally inefficient and ill paid. The water and gas companies seem to vie with each other in their

endeavours to destroy the paving; and a portion of the Strand was quoted as having been removed 30 times within two years.

With respect to Mr. Taylor's system of paving, it was contended that the Mount Sorrel granite was a very superior material, both as regarded its toughness and durability, and that its natural structure enabled it to be worked very advantageously into the small cubes. The main feature of the system was the selection of the material for the substratum, and the careful preparation, so as to afford a sufficiently rigid, but yet imperceptibly elastic bed, wherein the small cube stones should rest. These stones being well driven down by repeated blows of light hammer, attained a degree of solidity which defied the heaviest traffic; and in the towns where the system was employed, considerable economy had resulted. The surface of the paving approached as nearly as possible to that of a macadamized road, affording even a safer foothold for the horses, and with less noise of passing vehicles. The surface possessed extraordinary durability, and it might be considered as a solid mass of granite. It was announced that, within a few weeks, there would be specimens of Mr. Taylor's system of paving laid down at the entrances of Hyde Park, where they would be subjected to regular traffic of a destructive nature, and which would be under constant observation.

A model of an improved crossing point was exhibited by Mr. Duncan, of Leeds; the notch in the rail was shown to be done away with, and the two rails in it were so dovetailed together, as to render any vertical motion between them impossible, thus materially strengthening the crossing. A piece of brickwork, set in Greave's blue lias lime, and which had been kept under water for nine days, was also exhibited. This material was composed of one-third of lime to two-thirds of burnt clay; and it was stated to have been used with great success in the tunnels on the Great Northern Railway, as well as in many hydraulic works, in which it was durable as cement.

At the monthly ballot for members, the following gentlemen were elected: Mr. E. O. Tregelles, as member; and Messrs. J. A. Agnew, W. Bevan, E. Goddard, J. D. M. Stirling, G. B. Thorneycroft, C. C. Williams, and Lieut. Douglas S. Galton, R.E., as associates. The next meeting was announced to take place on Tuesday evening, March 12th, when the following interesting paper would be read, "On Tubular Girder Bridges," by Mr. Wm. Fairbairn, M. Inst. C. E.

OPENING OF THE BRITANNIA TUBULAR BRIDGE.

The opening of this magnificent structure, looked forward to with so much interest, came off on Tuesday last, with the grandest success. At half-past 6 o'clock A.M., three powerful engines (the *Cambria*, the *St. David*, and the *Pegasus*), of 50 to 60-horse power each, decorated with flags of all nations and union jacks, steamed up, and harnessed together, started from the Bangor station, carrying Mr. Stephenson (who drove the first engine through the tube) and the following gentlemen:—Mr. Bidder, engineer; Mr. Trevethick, locomotive manager of the London and North-Western Railway; Mr. Edwin Clarke, Mr. Latimer Clarke, Mr. Appold, and Mr. Lee. At precisely 7 o'clock the adventurous convoy, progressing at a speed of seven miles an hour, were lost sight of in the recess of the vast iron corridor. Instead of being driven through with a despatch indicative of a desire on the part of those who manned it to get in and out with the utmost expedition, the locomotives were propelled at a slow and stately pace, with the view of boldly proving by means of a dead weight the calibre of the bridge at every hazard. The total weight of the locomotives was 90 tons. The appearance of the interior of the tube during the interesting experiment was of a novel and remarkable character. The pauses that occurred during the progress of the transit furnished an imposing view of the interior of the gigantic structure, which, as contrasted with that of a tunnel of similar length, was rendered comparatively cheerful by the recurrence at intervals of loopholes of light, which serve the three useful purposes of ventilating, lighting, and divesting the tube of steam from the passing engines. The locomotives were brought to a standstill in the centre of each of the great spans, without causing the slightest strain or deflection. The first process—that of going through the tube and returning—occupied altogether 10 minutes. The second experimental convoy that went through consisted of 24 heavily-laden waggons, filled with huge blocks of Brymbo coal, in all, engines included, an aggregate weight of 300 tons. This was drawn deliberately through, at the rate of from 8 to 10 miles an hour, the steam working at quarter-power, and on the engines of this train, besides the gentlemen already enumerated, there were Mr. Hedworth Lee, the resident engineer, Mr. Charles Rolfe, Mr. J. MacLaren, Mr. Borthwick, Mr. T. L. Gooch, Mr. F. Foster, engineer, Mr. Binger, manager of the line, Mr. J. C. MacLaine, maker of the tubes, and a large number of scientific gentlemen. During the passage of this experimental train through the tube, a breathless silence prevailed that was almost solemn, until the train rushed out exultantly, and with colours flying, on the other side of the tube, when loud acclamations arose, followed at intervals by the rattle of artillery down the straits. Upon the return, which occupied about seven minutes, similar demonstrations ensued, and during the progress of the second trip to ascertain any possible vibration reported they could detect no sensible deflection. After this, Mr. Stephenson and his staff steamed up to Plas Llanfair, Mr. Foster's seat, and partook of a handsome repast. Meanwhile the locomotives were passing up and down the interior of the tube, without eliciting the slightest manifestation of strain. An ordeal stronger still was then resorted to: a train of 200 tons of coal was allowed to rest, with all its weight, for two hours in the centre of the Carmarthenshire tube, and at the end of the time, on the lode being removed, it was found to have caused a deflection of only four-tenths of an inch. It is remarkable that this amount of deflection is not so much as one half-hour of sunshine would produce upon the structure, it being, moreover, calculated with confidence that the whole bridge might with safety, and without injury to itself, be deflected to the extent of 18 inches. These loads, it is most material to remember, are immensely more than the bridge will ever be called on to bear in the ordinary run of traffic, though the engineers are of opinion that it would support with ease, and without much show of deflection, a dead weight on its centre of 1000 tons. Twelve miles an hour is the limit of speed at which Mr. Stephenson intends that trains shall at first go through, more particularly as there are sharp curves at the termini of the tube.

During the trial of the dead weights very interesting episodical proceeding took place in the interior of the Carnarvonshire land tube—that of putting the last rivet into the plates, making exactly the 2,000,000th that have been used. The rivet having been put in by Mr. Haig, was driven home and fastened by Mr. Stephenson with successive strokes with a huge hammer. This ceremony was followed by the waving of hats and the deafening acclamations of the workmen.

Mr. STEPHENSON, in a brief address, eulogised the industry of these men, and their devotion to their work. He could never forget the ingenuity and the labour exhibited in the humble sphere of his great operation, nor the masterly manner in which the work had been carried out under the superintendence of Mr. T. Fleet, who had distinguished himself as a sterling and honest workman. It was being now nearly 12 o'clock, another testing train was prepared to be taken through the tube. It consisted of the three engines, the 200 tons of coal, and from 30 to 40 railway carriages containing between 600 and 700 passengers, packed together as closely as in a basket, all so clamorous and eager to "go through the tube," that it became impossible to accommodate them. At length, obediently to a long loud whistle, the train, which was almost long enough to cover the extent of tube, glided slowly into the interior, saluted by a loud burst of "Hale, Britannia," from an array of Liverpool seamen up aloft in the towers at the entrance, on the front of which, cut deeply in the stone, were the words, "Erected Anno Domini, 1850: Robert Stephenson, Engineer." As the huge train trudged slowly through the tube, successive salvos of artillery were fired at each end. This accomplished, the steam was got up, and the company assembled proceeded at the rate of 35 miles an hour, amid the magnificent scenery and snow-capped hills of Wales, to Holyhead, where they were received by all the principal townspeople, and with salutes from the steam-ships in the harbour.

The effect of the recent hurricane on the calibre of the tube has proved that its lateral surface strength is sufficient and far more than sufficient, to resist the strongest wind.

It is calculated that taking the force of the wind at 50 lbs. on the square foot—an excessive supposition—the resistance offered by the bridge would be 300 tons \times 2 = 600 tons which is not two-thirds of its own weight.

The wind going at 80 miles an hour, the rush of a hurricane, would only press in the ratio of 128 tons on the side.

It is intended, when both tubes are up, to brace them together with stays so as to counteract any possible oscillation.

The great work has now been four years in hand, and is nearly complete,

while Telford's suspension-bridge took eight years.

The floating and actual transference of the tubes has occupied since June last—a short period

when the bulk of the fabric is taken into consideration. Great fears were entertained for its safety during the late gales, from the recollection in this part of the country of the damage done to Telford's suspension-bridge.

The express train at 2 o'clock P.M. from Holyhead, and which started ten minutes after the experimental train arrived there, would have been sent through the tube, and thus have saved an hour, but this could not be done without the consent of the Railway Commissioners, unless under heavy penalties.

It is understood that Capt. Symonds, the Government inspector, will inspect on the 9th inst., and report to Government; and the public inauguration for everyday traffic may be expected on the 10th inst.

The inauguration was to have taken place on the 17th, St. Patrick's day, out of compliment to the natives of the sister isle, but that day happened to fall on a Sunday, this could not be accomplished.

It may be interesting to know that the general opinion of the numerous engineers present yesterday appears to be that the Britannia tube is as trustworthy as any tunnel *terra firma*.

THE DISC ENGINE.—The Admiralty have ordered Mr. Rufford to remove his disc engine from the iron steamer *Mina*, and the vessel is to have her ordinary surface-working engines refitted, when she is to have some real employment in conveying dock-yard stores between Woolwich, Deptford, Sheerness, and Chatham.—*United Service Gazette*.

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

MONDAY	Wheat May Silver and Copper Mining Company—offices, at Twelve.
	Guadalupe and Meuse Railway—offices, at One.
	Natal Company—Albion Tavern, at half-past Seven.
TUESDAY	London Commercial Sale Rooms Company—offices, at Twelve.
	United Gas and Gasometer Company—offices, at One.
WEDNESDAY	London and Dulwich Bank—London Tavern, at One.
THURSDAY	West London Railway—London Tavern, at Twelve.
	South-Eastern Railway—London-bride Tavern, at One.
	Metropolitan Stone Company—offices, at Twelve.
	Chesire and Highland Railway—Euston Station, at Twelve.
	Irish Water Land Improvement Company—offices, at One.
	Victoria Life Assurance Company—offices, at One.
	Clarendon Mutual Assurance Company—offices, at One.
FRIDAY	New Brunswick and Nova Scotia Land Company—offices, Twelve for One.
	Merton Life Assurance Company—offices, at Twelve.

[The meetings of Mining Companies are inserted among the Mining Intelligence.]

RAILWAY PASSENGERS' ASSURANCE COMPANY.

The first half-yearly meeting of shareholders of this company took place on Wednesday, at the offices, Old Broad-street, City,

JOHN DEAN PAUL, Esq., in the chair.

Mr. ALEXANDER BEATTIE (the secretary) read the following interesting report, fully detailing the satisfactory progress of the company's operations:

REPORT.
The directors, in meeting the proprietors for the first time, are happy to be able to communicate to them on the successful establishment of the company, and on the steady progress of its business from the period when the office was opened to the public in July last. The Act of Parliament received the Royal Assent on the 26th June, and the directors lost no time in commencing the issue of tickets. Extensive as the negotiations were which had to be conducted with the railway companies, in order to obtain their co-operation in the issue of insurance tickets at the various stations, to complete the necessary arrangements, and to establish the system on all the leading railways connected with the London and North Western line, the directors and principal officers of which took an honourable lead in affording the public the opportunity of availing themselves of the advantages afforded by the company to travellers; and now they are happy to state that insurance tickets, both for single journeys and periods of time, similar to those for which periodical railway tickets are issued, are obtainable on the following lines of railway—

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tested, the directors trust, that when public confidence is secured, from a knowledge of the responsible character of the parties connected with the company, and the satisfactory mode in which claims have been adjusted, it will receive so large a measure of support as to make it remunerative to the proprietors who have stepped out of the beaten track to establish, what, in the words of some of those who have been relieved by it, has been characterised "as a useful and valuable institution."

The proprietors will have to elect three directors at the time, in the room of Mr. John Dean Paul, Mr. James Clay, M.P., and Mr. George Berkeley Harrison, who retire, by ballot, in conformity with the Deed of Settlement. These gentlemen severally offer themselves for re-election, as has been notified by circular.

The two auditors, Mr. Alexander Scruton, and Mr. Thomas Charles Bates, retire at this time, in accordance with a provision of the Deed of Settlement, and they likewise offer themselves for re-election, if agreeable to the shareholders.

The Deed of Settlement provides that the remuneration to the directors, for their services, should be fixed at this meeting. But, as far as the past year is concerned, notorious as their labours have been, they desire most cheerfully to tender them gratuitous to the company; for they feel, that in the infancy of the concern, and with such unavoidable heavy expenses at the commencement, it will be most satisfactory to them to lighten the expenditure for the present, and leave it to the proprietors hereafter, to fix the remuneration to which they shall be entitled.

The directors cannot here omit to acknowledge the large amount of kindness, co-operation, and aid they have received from the several boards of directors and secretaries, and managers of the various railway companies on whose lines the system is in operation; and in particular they desire to express their thanks to Kenneth Morrison, Esq., the manager of the railway clearing house, through whose ability and attention the system of returns and checks of the issues of tickets has been rendered so easy and so perfect.

The accounts were then laid before the meeting.

The CHAIRMAN said, the time had arrived when it became the duty of the directors to give some account of their stewardship, in the discharge of which he trusted they have been found capable. (Hear, hear.) They confidently hoped that the report, which was now printed, and was before them for approval and confirmation, was so far satisfactory, as to justify the expectations which had been entertained of this novel application of the principles of life assurance by the Railway Passengers' Assurance Company. (Hear, hear.) Its great principles, and the benefits conferred by the society, were becoming more known and better understood, and, consequently, were more appreciated by the travelling population of the country. He had, therefore, great pleasure in moving that the report and statement of accounts now read be received, approved, and entered on the minutes. In submitting this report of their operations up to the present time, he would crave the indulgence of the meeting, whilst he made a few observations in connection with it, which he hoped would dissipate any doubts or misapprehensions which might yet linger in the public mind, as to the *bond fide* nature of the undertaking. As to its great practical utility, he had only to refer to the high and honourable testimony of many who had witnessed and experienced the benefits and conveniences of such an institution, which, in his opinion, ought to commend it to the support of every class of travellers. Attention had been drawn to the exceedingly low rate of premium, and the comparatively large amount of benefit offered in case of death or personal injury, which circumstances had led to questions as to the stability of such a company. It had been asked, how 1000*l.* could be insured for 3*d.*, and this might seem strange to many persons, he admitted. Such a doubt would naturally arise when people looked at the bubble schemes which had been projected, and the losses which had been incurred, in consequence of men intrusting their capital in the hands of men without judgment, position, or experience. Now, without regard to their own company, he thought he might, without presumption, refer to the names of the directors as a sufficient guarantee that all claims upon them would be met with promptitude and liberality—(cheers)—and if any doubts existed upon the subject, he thought that he need only refer to the parties who had reaped the benefits the company had proposed to give the public during the short time it had been established—indeed, he thought that the public were already beginning to acknowledge that they could appreciate those advantages; and proving that, in spite of the promulgation of free-trade principles, protection, as applied to one subject at least, was not altogether unpopular—(laughter)—as 65,000 persons had availed themselves of the security afforded by the tickets of the company, irrespective of those parties who had taken periodical tickets. He hoped that these few observations would disabuse the public mind of any doubts which might have existed—being assured that the benefits which the company offered, only required to be better known, and better understood, to receive that general and extended support to which it was so justly entitled. (Hear, hear.) A most novel and, in his mind, most important feature in the operations of the company was the compensation which the holders of the tickets of their company received for personal injuries and loss of time which might be occasioned to parties by railway accidents. The application of that principle had been productive of the most beneficial results, and, in many instances, the compensation which the company had awarded had come as a most timely and acceptable relief to the parties injured. (Hear.) Beyond that relief, too, the company bound themselves to pay 1000*l.*, should the life of any of their assurers be sacrificed, for the insignificant price of 3*d.* Seeing the number of parties who were frequently and unavoidably compelled to travel by railway, leaving wives and children altogether unprovided for, if by any accident they should be deprived of life, he thought that benefit could not be too highly estimated. It was most gratifying to the directors that such had been their success, that up to the present time the directors had not had occasion to make the call of 1*p.* per share on the shareholders, which they were authorised to do under the Deed of Settlement, in addition to the deposit of 10*s.* per share. (Hear.) Another most gratifying feature in the operations of the company was the limited nature of their responsibility—the liability on the single journey tickets only extending, on an average, over a period of one or two hours; and in no instance did their liability extend upon any one policy beyond twelve months. Looking at the gradual improvement which had taken place in their business since the establishment of the company, especially since the commencement of the present year, he thought they had sufficient evidence to show that the advantages they offered were being appreciated by the public, and to justify them in anticipating that at no distant day the proprietors would obtain a remunerative return for the capital, labour, and anxiety which had been expended in bringing it to its present most promising position. (Cheers.) He could assure them that, if confidence were continued in them, they would use their best exertions to promote the interests of the company, and he hoped when they again met, six months hence, they would have fully realised all the expectations which had ever been held of the benefits and success of the Railway Passengers' Assurance Company. (Cheers.) In conclusion, he begged to move that the report and accounts be received, adopted, and circulated among the proprietors; but if any shareholder had any questions to put, he would be happy to answer him.

Mr. G. B. HARRISON (deputy-chairman) said, that in proof of the progress of the institution, he would just mention that this week they had applications for 32 periodical tickets; and up to the last hour they had come in a greater proportion. (Hear, hear.) He would beg to second the adoption of the report and accounts.

Mr. APPLEYARD wished to know in what stage their application for further powers was at present?—The CHAIRMAN said, the bill had passed the second reading, and they were now negotiating with the Lord Chancellor before proceeding to the third reading, with respect to the alteration of the stamp duty. —The report and accounts were then adopted unanimously.

Mr. ELLMORE observed that, after the able speech of their excellent chairman, he thought they could not do better than re-elect him; and he would, therefore, move a resolution, that John Dean Paul, Esq., be re-elected a director of the company. (Applause.)—Mr. ASHBERE seconded the motion, which was agreed to unanimously.

James Clay, Esq., M.P., was also re-elected a director unanimously, as also G. B. Harrison, Esq., the deputy-chairman. Messrs. Scruton and Bates were also re-elected auditors.

The Rev. Mr. LEE moved a vote of thanks to the chairman and directors for their able management and gratuitous services in behalf of the company.

Mr. LEE STEVENS was happy to second the motion. He congratulated the meeting on the first six months' experiment of a principle in life assurance altogether novel. The result of their operations had been, in his opinion, extremely successful—(hear, hear)—and more particularly as that result was obtained upon comparatively so small a number of insurances. The report stated that upwards of 65,000 single journey insurances had been made, and that the persons who had applied for periodical tickets amounted to 1683. Having done so much in so short a period, he did not see why they ought not to expect to do considerably more, now that their principle had been found successful. Now, on the general principle of life assurance, the largest number of risks was thrown on the smallest number of contingencies, so that, for the first 2 or 3 years, that principle was sometimes ruinous to such companies, which showed that the principle on which this company acted was a sound and a proper one. He was sorry to find no return of casualties for the years 1848 and 1849, for he thought they had exceeded those published, and he was quite convinced that the principle of suppression was at work throughout the country. It was quite possible to do so with the local newspapers; but he doubted if it could be managed so with the metropolitan press. The return he alluded to was for the year 1847, and by this he found that 52 deaths had occurred in that year, besides personal injuries; and that 51,000,000 of persons had travelled on railways in 1847, which was about one casualty for about 1,000,000 passengers. He saw no reason to suppose that there had been any falling off in 1848 and 1849, but the contrary. There was thus a large margin for the success of this company, seeing that less than 100,000 had availed themselves of its benefits; whilst they had something like 51,000,000 to go upon. Although this company did not begin to declare dividends at present, yet, by the end of 1851, if business went on in the same proportion, he apprehended they would receive handsome dividends, which would far exceed those of any other incorporated company for the like purpose. (Hear, hear.) He had made this allusion because some gentlemen might have expected a dividend. From what

he understood of insurance companies, a dividend was not looked for till four or five years; whereas, in this company, they might expect such a result in 16 or 18 months' time from the commencement of business. He would conclude by seconding the vote of thanks to the chairman and directors for their generous, able, and gratuitous services, in the cause of the society; and he hoped, when the next meeting took place, the shareholders would be able to meet the directors with the same liberal feelings as to remuneration. (Applause.)

The resolution was passed unanimously.

Mr. ELLMORE moved a vote of thanks to Messrs. Scruton and Bates, the auditors.—Mr. HOLY, sen., seconded the motion, which was passed unanimously.

Mr. SCRUTON returned thanks, and said that he was happy to say that the accounts of this company had been kept in such an excellent state, that he had merely to go through them and examine the vouchers. (Hear, hear.)

Mr. BATES also returned thanks.

Mr. APPLEYARD then moved a vote of thanks to the worthy chairman, which was seconded by Mr. KETLEY, and passed by acclamation.

The CHAIRMAN returned thanks, and was happy to hear the testimony of Mr. Scruton, who was well known as a man of figures, that the books of this company were excellently kept.—The meeting then separated.

ÆGIS LIFE ASSURANCE COMPANY.

The first annual meeting of this company was held on Thursday, the 7th inst., at their offices, Moorgate-street,

J. MILLARD, Esq., in the chair.

The CHAIRMAN begged to expressive great gratification he felt at having the honour to preside over their first annual meeting, and of congratulating the shareholders on the success which had hitherto attended their operations. He would not then detain them, but call on the secretary to read the report, after which he would be happy to explain any points in it which might appear to require it.

Mr. SCOTT (the secretary) then read the advertisement convening the meeting, and the following report:—

The time has now arrived when, according to the provisions of your Deed of Settlement, our directors are called upon to make the first annual report of the proceedings of the company. In doing this, it is hardly necessary to remark, that the first year is one of great importance in the growth of every undertaking, inasmuch as its ultimate success or failure mainly depends on the soundness of the principles on which it is based, and the judgment, prudence, and economy with which its operations are conducted.

The period during which the society was founded was one of unusual depression, notwithstanding this, and many other difficulties incident to the formation of a new company, the company's Deed of Settlement was completely registered in the month of Dec., 1846, and shortly afterwards a payment of 10*s.* per share was called for, and made, to meet the preliminary and working expenses.

The directors feel much gratification in remarking, that these expenses are far less than those incurred by any other insurance company in the course of its formation, as may be seen on examination of the accounts printed from the returns filed with the Registrar of Joint-Stock Companies. The directors have not thought it necessary to make any further call.

In the month of April, 1849, the directors were enabled to commence business by issuing policies of assurance on life; and from that time to the 31st of Dec., last, the company received 113 proposals, covering 65,039*l.*, of which 42 were rejected, and 63 accepted and completed. These 68 policies assure, in the aggregate, the sum of 35,380*l.* odd, at annual premiums amounting to 1200*l.* 16*s.* 7*d.*, and each policy averages 52*s.* The 68 policies include 7 policies, assuring 1919*l.*, in connection with loans by the company to the assured. Happily not a single policy has become a claim by the death of an assured.

In addition to the life policy business transacted, as above stated, an arrangement made with the Union Fire and Life Office has been carried into effect, by the introduction to that office, through the agency of your company, of 239 fire policies during the three-quarters of the year, insuring property to the extent of 280,260*l.* The commission received by your company for this business amounts to 57*s.* 6*d.* This is a profit without risk, and it may be extended to a considerable amount.

Your directors take this opportunity of suggesting to the proprietors the great advantage that the company would derive by their effecting with the Union Fire Office, through this company, whatever fire policies they may have an opportunity of influencing, every facility for doing which will be afforded through our secretary.

Upon this state of your affairs, it may be remarked that, although the number of life policies issued is not very great, the past year has been one of extraordinary character as affecting the contingency of human life, and the operations of life assurance offices, distinguished, as it has been, by the visitation of the cholera, and the great mortality caused thereby. Your directors, on this account, were induced to act with extreme caution, and were less anxious to extend the business of the company than they would have been, had the period been as healthy as usual. This will explain what may appear at first sight to be a large proportion of rejected proposals.

It is right also to state that very little expense has been incurred in advertisements. With reference to the accounts, the balance-sheet, as audited, showing the state of them up to the 31st Dec., 1849, is now submitted to you.

On closing their report, your directors have to claim your attention to the services of your auditors, with a view to vote them some remuneration for the audit of the accounts now submitted to you. You will, perhaps, think it right also to vote some remuneration to your directors for their past services, bearing in mind that several of the number have devoted much of their time and influence for the benefit of the company; and that, through their exertions, the most critical period in the career of a life insurance company has been successfully passed. It now only remains for your directors who retire, according to the 5th clause of the Deed of Settlement, to surrender into your hands the posts they fill; and, accordingly, as they do, that they leave the society in a sound and flourishing state, they venture to express their thanks to the successors who, by their exertions and perseverance, conduct it with great prosperity to maturity.

The balance-sheet showed that the receipts had been from deposits on shares, 11,457*l.*; premiums, 12,982*l.* 3*s.* 1*d.*; cash received for investment, 15,867*l.* 16*s.* 8*d.*; office fees and property tax, 6*s.* 16*s.* 3*d.*—making a total of 39,567*l.* 16*s.* 8*d.*; which is thus disposed of—Preliminary expenses, 975*l.* 8*s.* 2*d.*; expense of the last year, 985*l.* 7*s.* 1*d.*; advanced on loans, 835*l.*; cash at banker's and petty cash, 623*l.* 19*s.* 2*d.*; value of furniture, &c., 415*l.* 10*s.* 2*d.*; policy stamps and premiums unpaid, 1617*l.* 10*s.* 7*d.*—making the total sum of 89,966*l.* 16*s.*—The accounts were audited by Mr. J. D. Stewart and Mr. W. T. Hawes.

The CHAIRMAN then briefly adverted to the various points in the report. In reference to the prudence with which the company had been conducted, he might call attention to the business arrangement which had been made with the Union Office, by which the proprietors of the Ægis Company secured a certain income, and any further calls on them for the purpose of granting loans, were rendered unnecessary. The Union was one of the oldest existing offices, now possessing a large accumulated capital, which, under the management, was rendered applicable for business transacted through the Ægis Office. The Union Company continued to act with it in perfect amity, so that the Ægis Company had the advantage, if any party wished to assume in an old office, that policies were effected with the Union through their office, and they received a profit from the transaction. If, on the other hand, parties wished to assume with the Ægis Company, the arrangements with the Union were such that they would be able to take them, and have all the advantage of the support of the Union Company. With regard to the amount of business transacted, he wished to observe that, though the report was laid before them as an annual statement of their affairs, the income was in fact only for nine months, the business only having commenced in April; so that, supposing it had been in reality an annual account that they had to present, it would have contained the produce from ten or twelve policies more, which had been since effected. With regard to the difficulties alluded to in the report in the formation of the company, they were not pecuniary difficulties, but arose from a difference of opinion among the original trustees and directors, as to the propriety of establishing this office in conjunction with a local office 30 miles from London, and which, from being overruled, caused the retirement from the board of one or two of the directors and the former chairman. The next point to which he would call their attention was, the small amount of the expenses incurred in establishing the company, as compared with the amount it had generally cost other companies. He did not wish to make any injurious comparisons on the subject, and he would, therefore, content himself by referring them to the parliamentary return, as made by different companies. As he had before said, the directors did not think it necessary to make any further call, as they had been able to effect an arrangement with the Union Office, by which their loan business was transacted by that office, the two companies dividing the advantages resulting from the policies. In addition to their life business, they now took proposals for insurance against fire, but they incurred no risk whatever from that class of business, as they merely introduced the policies to the Union Office, who granted the policies and took the risk, while the Ægis Office received a commission for the introduction; and it was a most gratifying fact, that that commission would enable them to declare a dividend on their capital, irrespective of all other business. (Cheers.) He did not ask them, however, to declare the dividend from any particular fund, but he had great pleasure in referring them to the report, to show that they could declare a dividend of 5*s.* per cent. without risk. (Cheers.) The directors had been very cautious in the business transacted during the past year, in consequence of the epidemic which prevailed for so long a time—a circumstance which accounted for the large number of policies declined to be granted, many lives having been refused, in consequence of supposed predisposing causes to the epidemic, which, under ordinary circumstances, would not have been declined. (Hear, hear.) He had great pleasure in announcing that the Hon. Mr. CURSON and a friend of his had been lately elected into the board, and had introduced their new secretary (Mr. Scott) to them; and he had no doubt, from their extensive and highly respectable connection, they would be able to bring a great accession of business to the office, and thereby promote its interest and welfare. (Cheers.) If any gentleman wished for any further explanation prior to the report being put for confirmation, he would be happy to answer him. (Hear.)

In answer to questions, the CHAIRMAN said, that the Union Office had lately reduced their charges for fire insurance; and, though their tables of life assurance were higher than those of the Ægis, they had approved those of the latter company, and never made any objection to receiving customers introduced from that office at the lower rates of premium. —Mr. MARTINDALE moved the adoption of the report.—Mr. GUTTERIS seconded the resolution, which was put and carried unanimously.

The directors having resigned their seats on the board, in order that they might be placed at the disposal of the shareholders, they were re-elected; and it was resolved that, as soon as the requisite legal forms could be complied with, the number of directors should be increased from 12 to 14; but Mr. George Tamplin (late Under Sheriff) should be elected a director, and the board authorised to elect the 14th director when that should see fit.

Messrs. J. D. Stewart, W. T. Hawes, and J. Patient were then elected auditors.

The CHAIRMAN said there was a certain amount of profit at their disposal, and if that had not been the case, he would not have thought of proposing a dividend. (Hear, hear.)

Mr. ADAMS seconded the motion, which was passed unanimously.

Mr. MACRILE said the question now was the remuneration they should offer to the directors. He found that those gentlemen had given no less than 540 attendances, with a view to promote the interests of this office. (Hear, hear.) He was quite convinced the meeting would not allow so much labour and so much attendance, on the part of the directors, to go unremunerated. The whole number of attendances on the part of those gentlemen at the office, since the formation of the company, amounted to 484; he would, therefore, move that the sum of 484 guineas be the remuneration for the directors for their services in the past year.—Mr. BUGLAND seconded the motion.

The CHAIRMAN said that, under the present circumstances of the company, neither he nor the directors could think of accepting more than half that amount. (Applause.)

Mr. MARTINDALE acknowledged that one-half the amount was a very inadequate remuneration for the directors' services, but thought the company was quite justified in offering that amount. (Hear, hear.)

The CHAIRMAN said, the resolution for the larger amount could pass if they thought

proper, but till the business of the office was in a much greater state of prosperity, the board would not agree to take more than half the amount. (Applause.)

The resolution for awarding the sum of 484 guineas was then passed unanimously.

Mr. HARBDL proposed that the sum of 10 guineas be awarded to the auditors for their past services.—Mr. ADAMS seconded the motion, which was agreed to unanimously.

The CHAIRMAN said, that he distinctly understood that no larger amount than 10 guineas would be accepted on the part of Mr. Haley and Mr. Stewart. (Hear, hear.)

Mr. MARTINDALE moved a vote of thanks to their worthy chairman for his able conduct in the chair. As that had been witnessed by all present, he hoped it would pass unanimously. (Applause.)—The motion was seconded, and passed unanimously.

The CHAIRMAN returned thanks, and said that, however gratified he was at their state of prosperity, he should be still more so, if all their lives were insured. He hoped to see them all for many years to come, and their institution from year to year more prosperous.

The Hon. EDWARD CECIL CURSON observed that he was the only one of the new directors attending that day, and he was sorry to say that his friend Mr. Lindsey was unable to attend the meeting on account of a death. He could say that he, and that gentleman also, would endeavour to perform their duties in such a way as to give them satisfaction.

He had a considerable knowledge of Mr. Lindsey, and believed from that gentleman's business connections with the Horse-Guards, that he would have much power to promote the interests of the society. (Applause.) As to their secretary, Mr. Scott, he considered him to be a man of strict honour and integrity, and, if he had so much trouble, not the slightest suspicion could be entertained of his uprightness of character, and ability to perform his duties honestly, and with advantage to the company. He really believed that they might place the strictest confidence in that gentleman. (Hear, hear.) He ought to impress on the shareholders the necessity of their individual exertions to promote the welfare of the company, for although they might place great confidence in the perseverance of the directors, yet without that of the shareholders, the

THE GOLD WASHING DISTRICTS—No. II.

BY E. HOPKINS, C.R., F.G.S.

The strange accounts sent to, and circulated by, the public papers, with respect to the supposed origin of the gold in California, and also the lectures given by scientific men on the same subject, endeavouring to prove the igneous origin of the gold-bearing rocks, and that the precious metal was thrown up at some imaginary epoch in geological time, clearly show that the formations of metals, mineral veins, streams, deposits, &c., are little understood. In some of the more recent letters received from the "diggings," we are informed that the geologists who had arrived there, were more at a loss in judging and looking out for the rich places, than the ordinary washers; indeed, it is said, that they and their "geological manuals," "guide to gold seekers," &c., make but a sad affair of it. How can we expect it otherwise? Those who wish to study such subjects, with the view of rendering geological knowledge really useful, must study the true character of rocks and minerals, *in situ*, and learn to separate geology founded on assumption, from geology founded on natural laws, otherwise their geological knowledge will be worse than useless, as seen in California. I have stated, in previous papers, that gold and other metals and minerals are often found disseminated in the primary rocks—*i.e.*, in the granites, porphyries and their oxidizing crusts—such as clay slate, or ferruginous silicate of alumina. In the *hard compact* crystalline rocks the gold is never found in grains; it is only detected in a very minute or aqueous state of saturation by analysis, or by very fine grinding and most careful washing; but after the change of the crystalline into the clay-slate, the gold becomes granular, and is deposited in flakes, crystals, &c., in the cleavage and fractures of the rock. In Gongo Soco the gold is found in the jacutinga formation (ferruginous clay-slate), in some parts sufficiently rich to quarry the rock to obtain the gold disseminated therein. The same has been observed at Morro Velho. The clay-slate in which the lode is formed is often found to contain from 1 to 1½ oits of gold per ton, and where this rock is fractured, rich veins of gold are necessarily formed. I have seen many similar rocks in New Granada and other places, producing gold by daily decomposition. The stanniferous granites of Cornwall present similar instances, the oxide of tin forming a component part of the granitic masses, and when such rocks decompose, they necessarily cause rich mineral deposits in the bordering ravines.

It is well known that the largest proportion of gold is obtained from rivers and superficial deposits, in granitic districts. The quantity extracted from veins is comparatively small, less pure, and depreciating both in quality and amount at moderate depths. Gold is always found in its metallic state, almost pure in alluvial deposits, but more or less alloyed when found in veins with minerals. There are no ores of gold, as often very improperly stated. This metal is never found mineralised in Nature; but inclosed commonly in iron pyrites, and frequently alloyed with other metals. The gold-producing rocks are not confined to particular geographical zones, as formerly supposed, but are found protruding, more or less, in all countries where the primary series is visible.

All the ferruginous and friable granites containing yellow mica and pale yellow quartz, which are subject to disintegrate into spherical exfoliation, produce gold during the change. The auriferous granites of the Pacific coast, as well as those situated in the interior of South America, show this effect in a very striking manner. The internal crystalline character of this rock changes as it approaches the surface, by an almost imperceptible gradation, into a kind of globular structure, like a coarse conglomerate. During this superficial process of decomposition, black ferruginous mineral is formed, and in which the greater portion of the gold contained in the rock becomes crystallised into grains of various sizes, depending on the richness of the rock, and other circumstances, favourable for crystallisation or deposition. This loose oxidized surface of the auriferous granites is washed down by rains, and thus forming the gold washing deposit. Those of California are precisely similar; and the quantity will depend on the amount of the above deposited at the foot of the ridges and the valleys. Although veins of auriferous quartz, and sometimes pyrites, are often found in such rocks, yet they cannot be compared in value with the rich superficial production.

PRODUCTION OF THE PRECIOUS METALS IN RUSSIA.

[The following are extracts from the Report of the Austrian Commissioners on the Exploration which took place last year in St. Petersburg.]

be very great. The mines are situated principally in the Ural and Altai mountains, and the lower range of hills which surround Nertschinsk, in Siberia. GOLD.—This is always an interesting topic, but doubly so at the present moment, and we shall, therefore, quote the report of the Austrian commissioners respecting it rather fully. The mines in which gold is found belong partly to the imperial domains, and partly to private individuals; they are found in the largest numbers in the neighbourhood of Katherinenburg, in the government of Perm, which is the seat of the superior administration of all the mines of Perm and Siberia. Gold washings exist in the district of Wertchourie, in the government of Perm. Large quantities of gold are also found in Eastern Siberia; the first discovery of its existence was made in 1829. The mines on the Ural were not worked until 1814, and those on the Altai not before 1830. The gold found in the sand is of various forms and weights—pieces weighing 16 and even 24 pounds have been discovered; but the shape in which it is chiefly found is a fine sand. The mines in Siberia can only be worked during four months; and the gold hunters are compelled to obtain a license from the Minister of Finance. The Crown has a royalty of from 20 to 24 per cent. on all gold found, and every pound of gold pays four roubles for police and other expenses. The import and export of gold in all shapes is duty free. It cannot, however, be exported from the western frontier of the empire. The annual publication of the St. Petersburg Academy, for the year 1849, contains the official returns of the total amount of gold obtained in the year 1847. The following table refers only to the mines on the Ural, which, it will be seen, are by no means so productive as the mines in Siberia:—

From the Crown Mines on the Ural.		(Poods)
Slatoust		35
Bogoslovsk		45
Gowblagodatsk		34
	10—127.	
From Private Mines.		(Poods)
Worob'jansk		48
Kacinsk Kaschitinsk		13
Nischne-Tagsk		28
Sysert		27
Newiansk		19
Schafftansk		6
Bilimbjajewka		2
Krestowodwiesnuk		6
Waswołoski		2
Werchne Ufaelsk		10
Itabansk		18—196.

Siberia produced in the same year the enormous quantity of 1456 poods. In the previous year the produce was 1677 poods.

PLATINA is found in the Ural mountains; the mines being worked by the Government and by private persons. The quantity produced annually has decreased very much of late years; in 1838 it averaged about 40 poods, while in 1847 it did not amount to 2, and in the following year only very little more. The present price is about 3600 silver roubles per pood. The exportation of this article is entirely free; manufactured platina is subject to an *ad valorem* duty of 25 per cent. France is the chief recipient of the platina exported from Russia.

SILVER is found in the Altai and Nertschinsk mountains. The latter produces on an average about 207 poods annually. Some silver mines exist also in the Ural Mountains, but were only discovered in 1834. It may be imported and exported duty free, with the exception of exportation on the western land frontier. The total quantity of silver produced in 1846 was 1191 poods.

The various articles manufactured from the precious metals are described as of high finish and great elegance. The silver articles were more particularly remarkable. This branch of industry is a very ancient one in Russia, and is principally distinguished for the remarkably fine silver chains, which are manufactured in large quantities in Ustjeg Welski, a town in the government of Wologda. These chains are not thicker than an ordinary thread, and are worn by the lower orders to suspend their crosses on. They are principally made by women. Gold and silver articles pay an *ad valorem* import duty of 35 per cent. The plated articles exhibited were held by the Austrian commissioners to be a convincing proof that Russian industry has rendered Russia independent of the foreigner in this branch.

VARIOUS METALLIC ARTICLES.—The manufacture of articles from sheet copper, brass, and tin has reached a high degree of eminence; the lamps, spoons, forks, &c., exhibited were very good specimens. The commissioners seem to have been much struck with the Russian tea-urns, which are very similar to the old-fashioned English ones. The lacquered wares are very favourably noticed, with the exception of the artistic designs, which are described as tasteless and coarse.

MACHINERY.—Machines for cotton and flax spinning, and for cloth factories,

are principally imported from England; the importation is duty free. The value (in silver roubles) of the machines imported was, in—

1842.	1843.	1844.	1845.	1846.	1847.
517,208	975,886	1,318,692	1,330,589	1,518,672	1,384,847.

There are several large factories in full operation in Moscow, which produce very creditable locomotives and fixed engines. Iron steamers have also been built, which have been very favourably reported on. The smaller kinds of machinery are made in great perfection, and the mechanics employed are, in this instance, chiefly Russians. The value of the machinery made in Moscow, during the year 1848, amounted to 106,000 silver roubles, hardly a tenth of the value of the quantity imported.

KILBRICKEN MINING COMPANY—WINDING-UP.

The second meeting, for the purpose of winding-up this company, was held before the Master Richards, by appointment, on Wednesday. Mr. Wright, the official manager, attended, with Mr. Rogers, as counsel, for the purpose of taking the evidence of Mr. Henry Crockford, the petitioner for the winding-up; and he was attended by his agent, Mr. Larmon, who handed in a document, purporting to be a history of the rise, progress, decline, and fall of the company, as made by Mr. Crockford, and which he now wished to have placed on the file of the proceedings of this court in his affidavit.

Mr. Rogers read the document, which was very lengthy. After giving an account of the mode in which Mr. Crockford had become connected with the company (which we published in our last in his petition), it went on to state, that after two calls had been made, the directors found they had no power to enforce them—that before the sale of the assets of the company their value had been estimated at 2500L 10s., but the auctioneer, who had been subsequently consulted, said the materials had been overvalued, and that they would not sell for that sum; that petitioner then purchased them for 2270L 10s., because he had heard that a new company for working the mine was about to be formed. However, only two individuals had come forward for that purpose, and now there was nothing doing at the mine, and he feared he would lose 1000L by the machinery. He (Mr. Rogers) said that Mr. Crockford could not put that document on the file as an affidavit, but he might hand it in as his statement, upon which he (Mr. Rogers) now proposed to ask him some questions. He would also contend that Mr. Crockford still held 630 roubles in the company, and that he could not get credit for any which he might consider he had transferred.

Mr. CROCKFORD then, in answer to questions from Mr. Rogers, said—I am the owner of the mines, machinery, and materials now, except about 170 tons of a material called "black jack," and about 40L worth of coal. I bought every article stated in the catalogue now produced except those. I also bought the interest in the lease of the mine, and it was I ordered the auction—at least, I did so by the authority of the directors, because a meeting had been held, at which the shareholders agreed that the company should be wound up, and they authorised me to do so. Two meetings were held—one on the 6th, and the other on the 22nd July, 1848, at which the resolutions were adopted, ordering the winding-up and sale. (Here the resolutions were read.) I consider I was acting by the authority of those resolutions in calling the auction, and effecting the sale of the machinery, &c. I consider myself now the owner of the mine, and the whole of the machinery; I paid the purchase money (2270L) at the sale to different parties. I paid the auctioneer 450L, and I also paid the money due to the London and Westminster Bank, except a sum which they have transferred to my private account. I consider I acted under the authority of the resolutions in calling the auction, and that I am now the owner of the lease, and all the property under the purchase.

The SECRETARY to the company here stated that the auctioneer advanced 480L—that was to say, 36L more than he had received, as all the works had been stopped, and the workmen were all starving. Mr. CROCKFORD, in answer to further questions from Mr. Rogers, said that he had given a bill to his banker for 560L, which was paid, so far as the company was concerned. He paid 160L of it, and the remainder was placed to the debit of his own private account. The bill was taken by the bank in payment of their claim against the company.

Mr. ROGERS: Well, but then I see by the bank-book that the bill you speak of was a bill discounted by the bank; how do you explain that?—Mr. CROCKFORD (after looking at the bank-book account) said he could not explain it.

Mr. ROGERS: But here is the bill-book of the company, and by that it appears that this bill was a bill payable by the company.

Mr. CROCKFORD (looking at the bill-book): It would appear so.

Mr. ROGERS: You take credit in your account for 561L 8s. 6d., but the bill is for only 516L, which makes a difference of 45L; how do you explain that?

Mr. CROCKFORD: The difference of 45L, was a sum paid to me by two gentlemen, who were to form the new company; but I am going to have back this sum, as the new company was not formed. I think there have been an error in the payment of those two sums into the bank to the company's account.

Mr. ROGERS: What do you consider the value of the property now to be?

Mr. CROCKFORD: I think it is a very unuseable property; but I consider the machinery, &c., are worth the money I gave for them, yet I would be satisfied with what I gave for them, if I could get it—I say that because the mine is in Ireland; it is more unuseable than mining property in general. I may say I nominally got 6500L for half the mine, but I paid back 3000L as capital to carry on the works; that money has been spent upon the mine.

Mr. ROGERS: Was the lease put up at the auction?—Mr. CROCKFORD: Yes; everything was put up at first, but as there was no bidding, the lease and the steam-engine, and the machinery under water, were next put up in one lot, and I bid 650L for them. I have since tried to sell the steam-engine for 700L; I purchased it originally for the use of the company for 800L, and the freight amounted to about 140L more. The machinery under water would be worth about 200L if it could be got out, but I do not think it likely it ever can be got out. I was the original projector of the mine; I was living in the county, and I thought it a valuable property. It was got up in this way:—My brother communicated with me, and he communicated with Mr. Evans, and the company was started, and I agreed to it, if I could get my terms. Mr. Evans was to get 100 free shares, and my brother 50 from me; the prospectus was sent me, and I approved of it. I have no doubt the printed prospectus now before me is the same as that I approved of, but that copied into the book is not the same.—It being now four o'clock, the inquiry was adjourned.

WINDING-UP OF RAILWAYS AND JOINT-STOCK COMPANIES.—It is rumoured that a new Master in Chancery will be appointed to meet the increasing amount of cases under the Winding-up Act. There are now upwards of 100 in operation, being at the rate of 10 to each Master, and they are found to impede very much the progress of many private suits.

CHEPSTOW, FOREST OF DEAN, AND GLOUCESTER.—On Friday the winding-up of this company's affairs came on before Master Kindersley. All the shares, to the extent of 30,000, were allotted; and 65,000L was received from the shareholders, on account of deposit, by the managing committee, consisting of Sir W. Twysden, Sir W. Johnson, Alderman Hughes, Major Whible, and Messrs. E. F. Dayrell, G. Lawton, E. Hall, P. Andrew, C. E. Colman, W. S. Fitzwilliam, J. Morrison, and W. F. Beaden. Surveys were made, and expenses were incurred; the undertaking was subsequently dissolved, and 28s. per share returned out of the deposit of 27. 2s.; but no account of receipts and payments was rendered. The secretary represented at this period that there was 12,000L more in hand, that the accounts would be made up, and a further return made; but this was not done. The petitioners further represent that the proportion of deposits retained for expenses was 22,000L, though the line was only 28 miles. Some time after the provisional committee projected another line, called the Welsh South Midland, and petitioners allege that the whole of the expenses of the new scheme were paid out of the funds of the Chepstow and Forest of Dean Company, and they have reason to believe that 11,000L out of the 22,000L before-mentioned was, without the knowledge or consent of the shareholders, appropriated for this particular purpose. Notwithstanding the retention of this large sum, there are debts still undischarged, and the petitioners pray for inquiry into this misappropriation of the funds, regarding which no explanations have been given by the solicitors or committee of management.

DIRECT WEST-END AND CROYDON RAILWAY.—On Wednesday last Master Tinney proceeded with the settlement of class I of contributaries to this undertaking, consisting of 100 provisional committee members, three of whom, Major Beresford, Dr. Anderson, and Mr. Underwood, were summoned and examined. Major Beresford, to save the time of the Court, and the expense of a tedious examination, admitted his liability as a member of the provisional committee. Dr. Anderson urged that he had no recollection of having been a member of the provisional committee, until a letter in the Doctor's own handwriting was produced, written in 1845, and addressed to the members of that body, expressing an anxiety to have the week-day meeting of the board altered to suit his professional engagements.

ISLE OF AXHOLM, GAINSBOROUGH, AND GOOLE RAILWAY.—The settlement of the list of shareholders came on before Master Sir W. Horne, on Tuesday. Counsel appeared for Mr. Hudson, who was chairman of the company, and for the York and North Midland Railway Company, who were to subscribe one-fourth of the capital, and stated that the company had not been able to produce their books, ordered by the Master in that occasion, but would do so on the next. A sum of 26,260L was paid in respect of the 2L. 2s. deposit, which was returned, deducting 10s. 6d. per share, but the petitioning shareholders state that there is a large amount of outstanding liabilities.

TWENTY ULCHES ON THE LEADS CURSED BY HOLLOWAY'S OINTMENT AND PILLS.—Extract of a letter from Mr. O. B. Kneller, dated Mount Gambier, South Australia, July 7, 1849:—"To Professor Holloway—Sir.—A curse has just come under my observation, in which the efficacy of your ointment and pills has been fully proved. A man of the name of Joshua Smith had upwards of 20 ulcers on his skin, which were so difficult to cure, that almost every remedy had been applied without any good effect. Your pills and ointment were then resorted to, and is about six weeks he was completely cured, and scarcely a mark is to be seen."—Sold by all druggists; and at Professor Holloway's establishment, 244, Strand, London.

Mining Correspondence.

BRITISH MINES.

ALFRED CONSOLS.—Field's engine-shaft is sunk to the 70 fm. level; the shaftmen are making preparations for driving east and west at this level. The lode in the 60 fm. level west is 8 ft. wide, and on the north part is a branch 6 to 8 in. wide, yielding copper ore of good quality; the lode here has a much better appearance than for some time past; the lode in the 60 fm. level east of the engine-shaft, is from 2 to 3 ft. wide, and the course of copper ore on the south part will yield 4 tons per fm., and worth £30. per fm.; the copper is extending east quite to our expectations. We have commenced sinking a winze under the 60 fm. east of the engine-shaft; lode 5 ft. wide—the course of ore is suspended for the week.

BARRISTOWN.—We have intersected in the 50 fm. level west and a lode was driving a westerly course, and running nearly at right angles with the new lode we were driving on; it is about 10 inches wide, with a south underlay, and for the greater part of 2 fms. which we have driven on its course, there has been a branch of lead, sometimes 3 in. wide, and at other times not more than 1 in. wide, besides a slight mixture of lead through the lode. We have done but little in the 30 fathom level west end, on new lode, existing between the two channels of ground, but very poor; the back of the 30 fm. level stoping to tribute is much the same as last reported. We are down about 7 fms. in the slot shaft under the 30 fm. level, and have commenced to sink a winze on the course of the lode in the bottom of the 30 fm. level.

BEDFORD UNITED.—The sumpmen have been employed during the last month in dividing and casing the shaft down to the 115 fm. level, and in cutting ground for platt, &c. The whole of this preparatory work will soon be completed, and the sinking of the shaft resumed. In the 103 fm. level, the driving from the shaft eastward, and from Burley's winze westward, is holed, and the men are not set to complete the tramroad home to this end, east of Burley's winze; as soon as this work is completed, they will commence rising against Crew's winze, in which the water is still too quick to permit its being sunk deeper. In the 103 fm. level, east of Burley's winze, the end has been carried a little north of east, in order to prove the size and character of the whole of the lodes. In the present end there is a leader 2 ft. wide, very good work, and likely to be much better in a few days. The north wall of the lode is not as yet set, and we shall therefore, continue the driving on its present bearing. The lode in the 90 fm. level east is 20 in. wide, good saving work, and leaves but little tribute ground than we expected. We are now cutting into it, and shall be able to report on it next week. In the 47 fm. level the cross-cut north is progressing favourably, in a good clean kilns, with a few indications of mineral, in small branches, crossing the driving. The pitches are yielding a full average quantity of ore, and we have sufficient broken for our next sampling. The ore sold in Feb. weighed 114 tons 3 cwt., and the parcel sampled is computed at 119 tons, the

THE GOLD WASHING DISTRICTS—No. II.

BY E. HOPKINS, C.E., F.G.S.

The strange accounts sent to, and circulated by, the public papers, with respect to the supposed origin of the gold in California, and also the lectures given by scientific men on the same subject, endeavouring to prove the igneous origin of the gold-bearing rocks, and that the precious metal was thrown up at some imaginary epoch in geological time, clearly show that the formations of metals, mineral veins, streams, deposits, &c., are little understood. In some of the more recent letters received from the "diggings," we are informed that the geologists who had arrived there, were more at a loss in judging, and looking out for the rich places, than the ordinary washers; indeed, it is said, that they and their "geological manuals," "guide to gold seekers," &c., make but a bad affair of it. How can we expect it otherwise? Those who wish to study such subjects, with the view of rendering geological knowledge really useful, must study the true character of rocks and minerals, *in situ*, and learn to separate geology founded on assumption, from geology founded on natural laws, otherwise their geological knowledge will be worse than useless, as seen in California. I have stated, in previous papers, that gold and other metals and minerals are often found disseminated in the primary rocks—*i.e.*, in the granites, porphyries, and their oxidizing crusts—such as clay slate, or ferruginous silicate of alumina. In the hard compact crystalline rocks the gold is never found in grains; it is only detected in a very minute or aqueous state of saturation by analysis, or by very fine grinding and most careful washing; but after the change of the crystalline into the clay-slate, the gold becomes granular, and is deposited in flakes, crystals, &c., in the cleavage and fractures of the rock. In Gongo Soco the gold is found in the jacutinga formation (ferruginous clay-slate), in some parts sufficiently rich to quarry the rock to obtain the gold disseminated therein. The same has been observed at Morro Velho. The clay-slate in which the lode is formed is often found to contain from 1 to $\frac{1}{2}$ ots. of gold per ton, and where this rock is fractured, rich veins of gold are necessarily formed. I have seen many similar rocks in New Granada, and other places, producing gold by daily decomposition. The stanniferous granites of Cornwall present similar instances, the oxide of tin forming a component part of the granitic masses, and when such rocks decompose, they necessarily cause rich mineral deposits in the bordering ravines.

It is well known that the largest proportion of gold is obtained from rivers and superficial deposits, in granitic districts. The quantity extracted from veins is comparatively small, less pure, and depreciating both in quality and amount at moderate depths. Gold is always found in its metallic state, almost pure in alluvial deposits, but more or less alloyed when found in veins with minerals. There are no ores of gold, as often very improperly stated. This metal is never found mineralised in Nature; but inclosed commonly in iron pyrites, and frequently alloyed with other metals. The gold-producing rocks are not confined to particular geographical zones, as formerly supposed, but are found protruding, more or less, in all countries where the primary series is visible.

All the ferruginous and friable granites, containing yellow mica and pale yellow quartz, which are subject to disintegrate into spherical exfoliation, produce gold during the change. The auriferous granites of the Pacific coast, as well as those situated in the interior of South America, show this effect in a very striking manner. The internal crystalline character of this rock changes as it approaches the surface, by an almost imperceptible gradation, into a kind of globular structure, like a coarse conglomerate. During this superficial process of decomposition, black ferruginous mineral is formed, and in which the greater portion of the gold contained in the rock becomes crystallised into grains of various sizes, depending on the richness of the rock, and other circumstances, favourable for crystallisation or deposition. This loose oxidized surface of the auriferous granites is washed down by rains, and thus forming the gold-washing deposit. Those of California are precisely similar; and the quantity will depend on the amount of the above deposited at the foot of the ridges and the valleys. Although veins of auriferous quartz, and sometimes pyrites, are often found in such rocks, yet they cannot be compared in value with the rich superficial production.

PRODUCTION OF THE PRECIOUS METALS IN RUSSIA.

(The following are extracts from the Report of the Austrian Commissioners on the Exploration which took place last year in St. Petersburg.)

be very great. The mines are situated principally in the Ural and Altai mountains, and the lower range of hills which surround Nertschinsk, in Siberia.

GOLD.—This is always an interesting topic, but doubly so at the present moment, and we shall, therefore, quote the report of the Austrian commissioners respecting it rather fully. The mines in which gold is found belong partly to the imperial domains, and partly to private individuals; they are found in the largest numbers in the neighbourhood of Katherinenburg, in the government of Perm, which is the seat of the superior administration of all the mines of Perm and Siberia. Gold washings exist in the district of Wertzchorneff, in the government of Perm. Large quantities of gold are also found in Eastern Siberia; the first discovery of its existence was made in 1829. The mines on the Ural were not worked until 1814, and those on the Altai not before 1830. The gold found in the sand is of various forms and weights—pieces weighing 16 and even 24 pounds have been discovered; but the shape in which it is chiefly found is a fine sand. The mines in Siberia can only be worked during four months; and the gold hunters are compelled to obtain a license from the Minister of Finance. The Crown has a royalty of from 20 to 24 per cent. on all gold found, and every pound of gold pays four roubles for police and other purposes. The import and export of gold in all shapes is duty free. It cannot, however, be exported from the western frontier of the empire. The annual publication of the St. Petersburg Academy, for the year 1849, contains the official returns of the total amount of gold obtained in the year 1847. The following table refers only to the mines on the Ural, which, it will be seen, are by no means so productive as the mines in Siberia:—

From the Crown Mines on the Ural.

	(Poods)
Katherinenburg	35
Slaton	48
Bogoslovsk	34
Gowblagodatsk	10-127.
From Private Mines.	
Werc Isetsk	48
Kacinsk Kaschimsk	13
Nischne Tagisk	28
Syssert	27
Newiansk	19
Schaftansk	6
Bilimbajewsk	2
Krestowodwishesk	18
Wsewołoskiisch	6
Worchnie Ufalesk	2
Itabansk	10
Other Mines	18-196.

Siberia produced in the same year the enormous quantity of 1456 poods. In the previous year the produce was 1677 poods.

PLATINA is found in the Ural mountains; the mines being worked by the Government and by private persons. The quantity produced annually has decreased very much of late years; in 1838 it averaged about 40 poods, while in 1847 it did not amount to 2, and in the following year only very little more. The present price is about 3600 silver roubles per pood. The exportation of this article is entirely free; manufactured platina is subject to an *ad valorem* duty of 25 per cent. France is the chief recipient of the platina exported from Russia.

SILVER is found in the Altai and Nertschinsk mountains. The latter produce on an average about 207 poods annually. Some silver mines exist also in the Ural Mountains, but were only discovered in 1834. It may be imported and exported duty free, with the exception of exportation on the western land frontier. The total quantity of silver produced in 1846 was 1191 poods.

The various articles manufactured from the precious metals are described as of high finish and great elegance. The silver articles were more particularly remarkable. This branch of industry is a very ancient one in Russia, and is principally distinguished for the remarkably fine silver chains, which are manufactured in large quantities in Ustjeg Weliski, a town in the government of Wologda. These chains are not thicker than an ordinary thread, and are worn by the lower orders to suspend their crosses on. They are principally made by women. Gold and silver articles pay an *ad valorem* import duty of 35 per cent. The plated articles exhibited were held by the Austrian commissioners to be a convincing proof that Russian industry has rendered Russia independent of the foreigner in this branch.

VARIOUS METALLIC ARTICLES.—The manufacture of articles from sheet copper, brass, and tin has reached a high degree of eminence; the lamps, spoons, forks, &c., exhibited were very good specimens. The commissioners seem to have been much struck with the Russian tea-urns, which are very similar to the old-fashioned English ones. The lacquered wares are very favourably noticed, with the exception of the artistic designs, which are described as tasteless and coarse.

MACHINERY.—Machines for cotton and flax spinning, and for cloth factories,

are principally imported from England; the importation is duty free. The value (in silver roubles) of the machines imported was, in—

1842.	1843.	1844.	1845.	1846.	1847.
517,208	975,386	1,318,692	1,630,529	1,916,972	1,884,847.

There are several large factories in full operation in Moscow, which produce very creditable locomotives and fixed engines. Iron steamers have also been built, which have been very favourably reported on. The smaller kinds of machinery are made in great perfection, and the mechanics employed are, in this instance, chiefly Russians. The value of the machinery made in Moscow, during the year 1848, amounted to 106,000 silver roubles, hardly a tenth of the value of the quantity imported.

KILBRICKEN MINING COMPANY—WINDING-UP.

The second meeting, for the purpose of winding-up this company, was held before the Master Richards, by appointment, on Wednesday. Mr. Wrygble, the official manager, attended, with Mr. Rogers as counsel, for the purpose of taking the evidence of Mr. Henry Crockford, the petitioner for the winding-up; and he was attended by his agent, Mr. Larmon, who handed in a document, purporting to be a history of the rise, progress, decline, and fall of the company, as made by Mr. Crockford, and which he now wished to have placed on the file of the proceedings of this court as his affidavit.

Mr. Rogers read the document, which was very lengthy. After giving an account of the mode in which Mr. Crockford had become connected with the company (which was published in our last in his petition), it went on to state, that after two calls had been made, the directors found they had no power to enforce them—that before the sale of the assets of the company their value had been estimated at 25600 lrs., but the auctioneer, who had been subsequently consulted, said the materials had been overvalued, and that they would not sell for that sum; that petitioner then purchased them for 2270 lrs., because he had heard that a new company for working the mine was about to be formed. However, only two individuals had come forward for that purpose, and now there was nothing doing at the mine, and he feared he would lose 1000 lrs. by the machinery. He (Mr. Rogers) said that Mr. Crockford could not put that document on the file as an affidavit, but he might hand it in as his statement, upon which he (Mr. Rogers) now proposed to ask him some questions. He would also contend that Mr. Crockford still held 650 shares in the company, and that he could not get credit for any which he might consider he had transferred.

Mr. CROCKFORD then, in answer to questions from Mr. Rogers, said—I am the owner of the mines, machinery, and materials now, except about 170 tons of a material called "black jack" and about 400 worth of coals. I bought every article stated in the catalogue now produced except those. I also bought the interest in the lease of the mine, and it was I ordered the auction—at least, I did so by the authority of the directors, because a meeting had been held, at which the shareholders agreed that the company should be wound up, and they authorised me to do so. Two meetings were held—one on the 6th, and the other on the 22d July, 1848, at which the resolutions were adopted, ordering the winding-up and sale. (Here the resolutions were read.) I consider I was acting by the authority of those resolutions in calling the auction, and effecting the sale of the machinery, &c. I consider myself now the owner of the mine, and the whole of the machinery; I paid the purchase money (2270 lrs.) at the sale to different parties. I paid the auctioneer 450 lrs., and I also paid the money due to the London and Westminster Bank, except a sum which they have transferred to my private account. I consider I acted under the authority of the resolutions in calling the auction, and that I am now the owner of the lease, and all the property under the purchase.

The SECRETARY to the company here stated that the auctioneer advanced 480 lrs.—that was to say, 30 lrs. more than he had received, as all the works had been stopped, and the workmen were all starving. Mr. CROCKFORD, in answer to further questions from Mr. Rogers, said that he had given a bill to his banker for 560 lrs., which was paid, so far as the company was concerned. He paid 100 lrs. of it, and the remainder was placed to the debit of his own private account. The bill was taken by the bank in payment of the claim against the company.

Mr. ROGERS: Well, but then I see by the bank-book that the bill you speak of was a bill discounted by the bank; how do you explain that?—Mr. CROCKFORD (after looking at the bank-book account) said he could not explain it.

Mr. ROGERS: But here is the bill-book of the company, and by that it appears that this bill was a bill payable by the company.

Mr. CROCKFORD (looking at the bill-book): It would appear so.

Mr. ROGERS: You take credit in your account for 561 lrs. 8s. 6d., but the bill is for only 516 lrs., which makes a difference of 45 lrs.; how do you explain that?—Mr. CROCKFORD: The difference of 45 lrs. was a sum paid to me by two gentlemen, who were to form the new company; but I am going to pay *that sum* back, as the new company was not formed. I think there *must* have been an error in the payment of those two sums into the bank to the company's account; they should have been paid to my private account.

Mr. ROGERS: What do you consider the value of the property now to be?—

Mr. CROCKFORD: I think it is a very unsaleable property; but I consider the machinery, &c., are worth the money I gave for them, yet I would be satisfied to sell *what I gave for them*, if I could get it—I say that because the mine is in Ireland; it is more unsaleable than mining property in general. I may say I nominally got 6500 lrs. for half the mine, but I paid back 3000 lrs. as capital to carry on the works; that money has been spent upon the mine.

Mr. ROGERS: Was the lease put up at the auction?—Mr. CROCKFORD: Yes; everything was put up at first, but as there was no bidding, the lease and the steam-engine, and the machinery under water, were next put up in one lot, and I bid 650 lrs. for them. I have since tried to sell the steam-engine for 700 lrs.; I purchased it originally for the use of the company for 800 lrs., and the freight amounted to about 140 lrs. more. The machinery under water would be worth about 200 lrs. if it could be got out, but I do not think it likely it ever can be got out. I was the original projector of the mine; I was living in the country, and I thought it a valuable property. It was got up in this way—My brother communicated with me, and he communicated with Mr. Evans, and the company was started, and I agreed to it, if I could get my terms. Mr. Evans was to get 100 free shares, and my brother 50 from me; the prospectus was sent me, and I approved of it. I have no doubt the printed prospectus now before me is the same as that I approved of, but that copied into the book is not the same—it being now four o'clock, the inquiry was adjourned.

WINDING-UP OF RAILWAYS AND JOINT-STOCK COMPANIES.—It is rumoured that a new Master in Chancery will be appointed to meet the increasing amount of cases under the Winding-up Act. There are now upwards of 100 in operation, being at the rate of 10 to each Master, and they are found to impede very much the progress of many private suits.

CHEPSK, FOREST OF DEAN, AND GLOUCESTER.—On Friday the winding-up of this company's affairs came on before Master Kindersley. All the shares, to the extent of 30,000, were allotted; and 65,000 lrs. was received from the shareholders, on account of deposit, by the managing committee, consisting of Sir W. Twysden, Sir W. Johnson, Alderman Hughes, Major Whilie, and Messrs. E. F. Dayrell, G. Lawton, E. Hall, W. P. Andrew, C. E. Coleman, W. S. Fitzwilliam, J. Morrison, and W. F. Beeson. Surveys were made, and expenses were incurred; the undertaking was subsequently dissolved, and 28s. per share returned out of the deposit of 21s. 2s.; but no account of receipts and payments was rendered. The secretary represented at this period that there was 12,000 lrs. more in hand, that the accounts would be made up, and a further return made; but this was not done. The petitioners further represent that the proportion of deposits retained for expenses was 22,000 lrs., though the line was only 28 miles. Some time after the provisional committee projected another line, called the Welsh South Midland, and petitioners allege that the whole of the expenses of the new scheme were paid out of the funds of the Chepstow and Forest of Dean Company, and they have reason to believe that 11,000 lrs. out of the 22,000 lrs. before-mentioned was, without the knowledge or consent of the shareholders, appropriated for this particular purpose. Notwithstanding the retention of this large sum, there are debts still undischarged, and the petitioners pray for inquiry into this misapplication of the funds, regarding which no explanations have been given by the aditors or committee of management.

DIRECT WEST-END AND CROYDON RAILWAY.—On Wednesday last Master Tinney proceeded with the settlement of class 1 of contributaries to this undertaking, consisting of 100 provisional committee-men, three of whom, Major Beresford, Dr. Anderson, and Mr. Underwood, were summoned and examined. Major Beresford, to save the time of the Court, and the expense of a tedious examination, admitted his liability as a member of the provisional committee. Dr. Anderson urged that he had no recollection of having been a member of the provisional committee, until a letter in the Doctor's own handwriting was produced, written in 1845, and addressed to the members of that body, expressing an anxiety to have the week-day meeting of the board altered to suit his professional engagements.

ISLE OF AXHOLM, GAINESBOROUGH, AND GOOLE RAILWAY.—The settlement of the list of shareholders came on before Master Sir W. Horne, on Tuesday. Counsel appeared for Mr. Hudson, who was chairman of the company, and for the York and North Midland Railway Company, who were to subscribe one-fourth of the capital, and stated that the company had not been able to produce their books, ordered by the Master in that occasion, but would do so on the next. A sum of 26,250 lrs. was paid in respect of the 21s. 2s. deposit, which was returned, deducting 10s. 6d. per share, but the petitioning shareholders state that there is a large amount of outstanding liabilities.

TWENTY ULCERS ON THE LEGS CURED BY HOLLOWAY'S OINTMENT AND PILLS.—Extract of a letter from Mr. O. B. Kneller, dated Mount Gambier, South Australia, July 7, 1849:—"To Professor Holloway—Sir—A cure has just come under my observation, in which the efficacy of your ointment and pills has been fully proved. A man of the name of Joshua Smith had upwards of 20 ulcers on his shins, which were so difficult to cure, that almost every remedy had been applied without any good effect. Your pills and ointment were then resorted to, and in about six weeks he was completely cured, and scarcely a mark is to be seen."—Sold by all druggists; and at Professor Holloway's establishment, 244, Strand, London.

Mining Correspondence.

BRITISH MINES.

ALFRED CONSOLS.—Field's engine-shaft is sunk to the 70 fm. level; the shaftmen are making preparations for driving east and west at this level. The lode is 60 fm. level wide 5 ft. wide, and on the north part is a branch 6 to 8 in. wide, yielding copper ore of good quality; the lode here has a much better appearance than for some time past; the lode in the 60 fm. level, east of the engine-shaft, is from 4 to 5 feet wide, and the course of copper ore on the south part will yield 4 tons per fm., and worth from 20l. to 30l. per fm.; the copper is extending east quite to our expectations. We have commenced sinking a winze under the 60 fm. east of the engine-shaft; lode 5 ft. wide—east of the course of ore on the south part is 2 to 3 ft. wide, and worth 30l. per fm. The 50 fm. level east is suspended for the week.

BARRISTOWWN.—We have intersected in the 30 fm. level west end a lode taking a westerly course and running nearly at right angles with the new lode we were driving on. It is about 10 inches wide, with a south underlay, and for the greater part of 3 fms., which we have driven on its course, there has been a branch of lead, sometimes 3 in. wide, and the course of copper ore on the south part will be through the lode, besides a slight mixture of lead through the lode. We have done but little in the 30 fms. level east end, on new lode, existing between the two channels of ground, but very poor; the back of the 30 fm. level east is suspended for the week.

BEDFORD UNITED.—The sumpmen have been employed during the last month in dividing and casing the shaft down to the 115 fm. level, and in cutting ground for plat, &c. The whole of this preparatory work will soon be completed, and the sinking of the shaft resumed. In the 105 fm. level, the driving from the shaft eastward, and from Barley's winze westward, is holes, and the men are now set to complete the tram-road home to this end, east of Barley's winze, in which the water is still too quick to permit of its being sunk deeper. In the 105 fm. level, east of Barley's winze, the end has been carried a little north of east, in order to prove the size and character of the whole of the lodes. In the present end there is a leader 3 ft. wide, very good work, and likely to be much better in a few days. The north wall of the lode is not as yet reached, and we shall, therefore, continue the driving on its present bearing. The lode in the 90 fm. east is 20 in. wide, good saving work, and leaves better tribute ground than we expected. In the 70 fm. level, the end has been extended, for the last 7 or 8 fms. by the sides of the lode; we are now cutting into it, and shall be able to report on it next week. In the 47 fm. level, the cross-cut north is progressing favourably, in a good clean killas, with a few indications of mineral, in small branches, crossing the driving. The pitches are yielding a full average quantity of ore, and we have sufficient broken for our next sampling. The ore in Feb. weighed 114 tons 3 cwt., and the parcel sampled is computed at 119 tons, which will be paid on the 21st inst.

BODMIN CONSOLS.—The wheel is nearly completed; we shall now get on fast with our surface work, and I hope to be sinking in a fortnight. The lode in the south adit continues to improve, both in size and quality, with large stones of lead; the ground is soft for driving, and sets 18s. per fm.—nothing can look better. Since writing the above, Hooper, one of our tributaries, has just sent in from the same end one of the best specimens of arsenite and carbonate of lead I ever saw.

BRYN-ARIAN.—The 10 fm. level, driving west from the engine-shaft, is much improved within the last three or four days; the lode is 4 ft. wide, with a good mixture of ore. The 10 fm. level east is rather improved—a little more ore than last reported. We set the engine-shaft to sink under the 10 fm. level on Saturday, by six men, to be carried 10 ft. long and 6 ft. wide, the men to pay for drawing all their stuff to the adit level, at 10s. 6d. per fm. The two stops east and west of the engine-shaft, are the same as last reported, each yielding about 15 cwt. of ore per fm. The lode in

17 ft. wide, 2s. 6d. per running yard; surface work, removing soil for buildings, 14s. 6d. per sq. ft., for the sum of 50s.; wheel pit to excavate, 2s. 6d. per cubic fm. from surface to 12 ft. depth; lobby to west end; pit 9s. per fm. in engine-shaft to sink to edit. 9 ft. by 6 ft., put in timber, and drive 6 fms. back to east end; pit, 5s. 6d. a smith's shop and count-house as per plan, masonry, tiles, and walls, 9s.; wheel-pit 4 ft. thick for wheel, 40 ft. by 3½ ft. wide, 12 ft.; all carpenters' work timber for roof, doors and account-house door with deal 12 ft.; drawing stones from quarries, 9d. per perch, about 240 perch required for wheel-pit, smithy, count-house, &c. The carriage of timber from Plymouth 2d. per ft., and iron 6d. per cwt., saving haulage, 2s. 4d. per 100 ft., 9s. 2s. 6d.; oak, beech, &c., 4s. I think, on the whole, the prices, with inducement and application on the part of the takers, will be remunerative, and should be satisfactory both to them and the adventurers. The bargains having been set, I am happy to say the weather is very propitious for speedy work. No time will be lost in having all in readiness for the wheel, so that we may at once return ore. Capt. Hawkins, who lately visited the mine, estimated the ore at surface, at 12 to 15 tons, worth 10s. per ton; however, in this time will be seen, as our operations now will be confined to preparatory work, before putting ore to ticketing. About 11 fms. were laid open in the lobby last week.

GONAMENA.—In the 17 fm. level Taylor's lode is poor and small. The 33 fm. level, on Taylor's lode, is suspended for the time; the men are rising in the back of this level, to meet a winze sinking from the 17, to have air to extend these levels. In the 60 fm. level, on Gilpin's lode, it is 9 inches wide, saving work, and producing half a ton of ore per fm. We have cut Gilpin's lode on the 80 fm. level, and driven on the east part 6 ft.; the lode is 2 ft. wide, spotted with ore; we have not commenced driving on the west part, but hope to do so in a few days. We sold on the 21st Feb. 33 tons of ore, at 9s. 10d. per ton, the amount of which covers four or five months' cost.—[The names of November and December account meeting appeared in last week's Journal.]

HEIGNSTON DOWN CONSOLS.—We have cut the lode in the eastern cross-cut, which so far as cut into (which is 3 ft.) is of a very fine description, composed of gossan, pebbles, and muriatic, with excellent stones of yellow, grey, and black copper. The other two cross-cuts progress satisfactorily; the winze sinking below this level—viz., the 35—is looking better, carrying a good leader of ore on the north part of the lode.

HOLMBUSH.—The lode in the 120 fm. level south is 4 ft. wide, composed of quartz and stones of lead; the slopes in the back of the level will produce 5 cwt. of lead per fm. The ground in the 120 fm. level cross-cut south, towards the flap-jack lode, is still very favourable—set at 2d. 15s. per fathom, and should it continue as at present we shall intersect it in four months from the present time. The ground in the 110 fm. level cross-cut west is also favourable, being set at 4s. per fm., still letting down a pretty deal of water. The flap-jack lode in the 100 fm. level, east of the great cross-course, is 10 in. wide, composed of spar, muriatic, and stones of copper ore; the tribute pitches in the back of the level are still productive. We have sampled to-day a parcel of silver-lead ore, computed 36 tons, to be tendered for on or before the 13th inst., agreeable to circulars which have been sent, together with samples of the same, to all the lead smelting companies.

KESWICK.—There is no alteration in the 10 fm. level rise at Brandley since my last report. The lode in the 20 fathom level north is looking very promising, being composed of spangled ore, with a string of solid ore running through it; in the 20 south the ore is looking well. In the 25 fm. sump the ore is better than last week; it is a splendid sample, and will make excellent potter's ore. In the 17 fm. sump on vein, at Thorntwistle, there is no alteration since last week; in the 17 fm. forehead the vein looks promising. In the bottom level nothing has been done since last week, owing to the stoppage of the wheel, for the purpose of enlarging the conduit, which takes away the waste water.

KIRKCUDBRIGHTSHIRE.—The lode in the 62 end, west of Stewart's, is 4 ft. wide—a large spar and carbonate of lime, with fine spots of ore through it—yielding 5 cwt. to the fm.; the lode in the 62 ends, east and west of Keith's, is still barren, although the lode in the west end is improving a little in appearance. The lode in the 50 end, west of ditto, is 2 ft. wide, with small spots of ore. We are looking out for a vessel, to carry the ore of next week.

LAMHEROOE.—Report from the superintendent:—I merely write to say that so far in my inspection of this mine things are very satisfactory. I have not gone through all details yet, but I expect to by the end of this week or beginning of next. In driving north from the engine-shaft in the 60 fm. level, by the side of the cross-course, the lode that was cut at the shaft is again intersected, after being hoisted 9 fms. 4 ft.; the main lode is about 20 inches wide, composed of white muriatic, with spots and veins of yellow ore, and the contiguous branches are of the same composition, evidently in a disordered state, probably of being so close to the cross-course; four men are set to drive east on it at 5s. per fathom. The stratification continues in the end, and throughout the level, of the same compact killas—soft and pale. The water jetting out from the cross-course in the end of the level is warm, almost tepid, whilst that from the country is very cold; this fact would lead one to believe that, in extending on this cross-course, some considerable quantity of ore would be found to the north—perhaps one great lode. We are sinking a few feet on this lode from the surface, to ascertain its exact bearing, and when we may probably cut it from our engine-shaft; perhaps it would be advisable to sink down on its course a few fathoms; the bearing on the surface demand a speedy investigation. At Davey's shaft, the cross-cut south is driven about 4 fms., and we think it will take, making due allowances for any alteration in underlay, about 7 to 8 fms. further driving to intersect the Benny caunter; the stratum at this depth (50 fm.) is compact, and not near so changeable, and the edges of the rock are covered with muriatic—a favourable indication. The same level, driving north of Davey's shaft, is about 9 fms. from the shaft, and we may calculate about the same distance to drive to cut the lode that has been intersected in the shaft in the 30 fm. level. The uniformly pale killas—pale, soft, and compact—in all the deep levels, may be considered of great importance, showing that we are below the influence of the uncongenial upper strata.

SOUTH PLAIN WOOD.—I have great pleasure in being able to report a most favourable improvement in Nicholson's lode. There is now a course of gossan of fine quality, with yellow and a little grey copper, and every appearance that, on driving further in the hill, we shall have good saving work. The appearance of the lode on the hill is also of a very favourable character—in fact, nothing can be finer than some of the gossan, which, perhaps, may contain silver; but I have not tested it. Altogether, I should say our prospects are very encouraging.

SOUTH WALES MINES.—Our pay and setting was on Saturday last, the 2d March, and the following is an account of the latter:—The cross-cut north, by six men, 6 fm. stent, or the month, at 2d. 10s. per fm. The shallow level, east of the old workings, by six men, 3 fm. stent, or the month, at 3d. 10s. per fm.; the lode is 12 feet wide, and looking very promising, with a branch of ore on each wall from 1 to 3 in. wide, with veins of ore running through the lode, and will yield from 6 to 10 cwt. of ore per fm., and I think we shall cut the lode by the end of March in the cross-cut north, 12 fathoms below the old workings. We have, for the present, suspended the deep adit east of the Rhymet river, and put the two men, with the other four, to drive east of the old workings, where the lode has a very promising appearance.

TRELAWNY.—In the 82 end, north of Phillips's shaft, the lode is 2 feet wide, worth 13s. per fm.; in the same level, south of ditto, the lode is at present split into branches, and worth about 4s. per fm. In the 72, north of ditto, the lode is 1 ft. wide, worth 7s. per fm.; in the same level, south of ditto, the lode is 2 ft. wide, worth 3s. per fm. In the 62, north of ditto, the lode is 3 ft. wide, worth 14s. per fm. Trelawny's shaft continues to go on favourably, and is now down 5 fms. under the 82 fm. level. In the 82, north of the shaft, the lode is 3 ft. wide, worth 8s. per fm.; in the 82, south of ditto, the lode is also 3 ft. wide, worth 8s. per fm. In the 72, south of ditto, the lode is 2 ft. wide, worth 10s. per fm. At the north mine, in the 55 end, north of Trebene, there is not yet any alteration. We have resumed the driving the 50, south of Smith's shaft, where the lode is 2 ft. wide. In the 30, north of Smith's, the lode is 2 ft. wide, worth 7s. per fm. In the winze in the bottom of the 30, north of ditto, the lode is 2 ft. wide, worth 6s. per fm. Our stops are looking very fair.

TRELEIGH CONSOLS.—The 100, east of Garden's, no lode taken down this week. The 90, west of ditto, lode 18 in. wide, with good stones of ore. The 80, west of cross-cut, on the north part, lode 18 in. wide, worth 2d. per fm. At Wheal Parent, the engine-shaft below the 40, sinks east of the engine-shaft, driving towards the middle lode; the 40, east of ditto, lode 18 in. wide, worth 2d. per fm. The 30, east of ditto, lode descended by a cross-branch. On the middle lode, the east adit east of Nicholson's shaft, lode 18 in. wide, with good stones of ore.

WEST WHEAL JEWEL.—The 85 fathom level, west of Williams's cross-course, on Wheal Jewel lode, is unproductive—drove last month 2 fms. 4 ft. 6 in. The 70 fm. level, west of Williams's cross-course, on the same lode, is worth 4s. per fm.—drove last month 1 fm. 4 ft. 6 in. The 57 fm. level, west of Williams's cross-course, on the same lode, is unproductive—drove last month 1 fm. 5 ft. The rise in the 47 fm. level, west of Williams's cross-course, on same lode, is unproductive—sunk last month 2 fms. 1 ft. The winze in the deep adit, on Williams's cross-course, on same lode, is unproductive—sunk last month 2 fms. 1 ft. The winze in the 70 fm. level, west of Williams's cross-course, on same lode, has not been taken down in the past week—sunk last month 1 fm. 3 ft. The 57 cross-cut, north of Buckingham's lode, on Hodges' cross-course, has been driven 1 fm. 2 ft. 6 in. The shallow adit stops, west of Tregoning's shaft, on Tolcarne tin lode, are worth 7s. per fm.—stopped last month 3 fms. 2 ft. In the deep adit, level west of Tregoning's shaft, on same lode, the lode is unproductive—drove last month 1 fm. 1 ft. The 12 fm. level, west of Tregoning's shaft, on same lode, is producing stones of tin—drove last month 3 ft. The following stops are working on tribute:—The stops west of Pryor's winze, in back of the 19 fm. level, are worth 20s. per fm.; the stops east of Tregoning's shaft, in the bottom of the 12 fm. level, on same lode, are worth 25s. per fm.; the stops west of Tregoning's winze, in the bottom of the same level, on same lode, are worth 22s. per fm.

WHEAL CREBOR.—We are driving the end on Georgiana lode; the lode is about 3 ft. wide; we cannot say much about it yet, as we have been hindered a good deal in accompanying parties, who have been inspecting the mine. We ought to get more men in Crebor with as little delay as possible; and the standard being so high, I have not the slightest doubt of making a considerable return soon after we commence.

WHEAL LAWRENCE.—Since we hold the shaft, we have been engaged in cutting plat and driving cross-cut, to bring the stuff from the south adit end to shaft, for hauling to surface. We are now driving west through the lode, which I find very large; we have already gone through 5 fms. and have still a large stream of water coming from the end, which proves that the main part of the lode is still a head of us; this, I hope, we shall prove in the course of next week; the part of the lode we have driven through contains a quantity of jack, muriatic, soft spar, &c.

WHEAL PENHALLE.—Though but little has been done this week in the 30 fm. level, having had to engage the men for coaling work, and in making sundry alterations in the pittore for driving the new lft., yet there has been enough to show this level is not deteriorating in value. In and from the north end we are driving a cross-cut, for the purpose of intersecting the lode on which the winze in the 20 fm. level has partially been sunk—I consider we have about 4 ft. to drive, the ground is good; and in the south end we are driving on a very good branch about 12 ft. wide, which is making to the west, and in about 3 ft. will apparently fall in with the copper lode, when I expect the conjunction will develop a very good bunch of ore. A cross-cut, it will be run, the latter being about 10 or 12 ft. east of the shaft; we are now driving north from this cross-cut in the lead lode behind the engine-shaft, and find it to be very good. I had anticipated, until lately, this lode came in connection with the copper lode about 2 ft. north of the shaft, but feel much pleasure in saying that in the presence of a lode of such magnitude as the copper one, I am fully convinced that the one behind the shaft is quite distinct and parallel one throughout. In the south end, in the 10 fm. level, the lode is now found to be very large and promising, and the lode in the winze north is poor. I have augmented the tribute department a little since my last, by increasing the pitches. This department continues much as last reported.

WHEAL SARAH.—We have cut a very fine lode east of the old mine in coaling, of a beautiful character—very fine gossan in it; but I cannot yet speak of its size, as it was only cut to day; I shall better be able to report it next week. This lode

is a great addition to the mine, being in a beautiful killas, and no doubt will make plenty of lead, and, as I said before, this will be a rich lead mine. I think we can prove this lode some depth without the aid of any machinery, being on the top of the hill. The engineer has just left my house on his return home, and told me of the new discovery.

WHEAL TREMAYNE.—At Painter's shaft, the lode in the 80 fm. level west is from 1 ft. 6 in. to 3 ft. wide; it has a promising appearance, with stones of ore, not to value. In the 30 east, on caunter, the lode is 1 ft. wide—this is still unproductive. At Thomas's shaft, the 50 fm. level west is opening tribute ground. The 70 fm. level east is worth 3d. per fm.; the 70 west, ground rather hard, and lode small. At Laurie's shaft, the 30 fm. level, west on north lode, lode 1 ft. wide, opening tribute ground. At the new shaft, in the 53 fm. level, east on Allen's branch, the branch has been rather disturbed by means of a cross-course. The 53, west of ditto, is worth 4s. per fm.; in the 53, west of engine-shaft, lode worth 5s. per fm. In the 45 fm. level, west of engine-shaft, lode worth 3s. per fm.; the men from both those ends are at present employed sinking and raising a winze, that a communication may be formed between the two levels, which is becoming necessary for the purpose of ventilation. The 45 fm. level, east on branch, is worth 5s. per fm. The boundary shaft has been sunk from strata 33 fms., and is hewed to the workings above the 20 fm. level. The rise from the 45 is also communicated to the shaft sinking below the 35 fm. level. We have no alteration in the tribute department worth of notice.

WHEAL VINCENT.—I have boxed up some very splendid stones of tin from the north lode, and have directed it to you at your office, according to your order. The stones that are wrapped in paper were broken from a leader on the north part of the lode, and which I expect is the same sort Mr. Murray means. The lode is still continuing good, equal to what it was when Mr. Murray saw it; but we consider it will much improve in driving towards the hill. I stated in my last report, that we had both stamps at work. You requested me to state what tin we have ready, and about getting ready, for market. Now, sir, I cannot punctually answer that question. The mines are not like lead and copper mines, where you can make your calculation by judging from the size and quality of the lode in sight: nor so with tin, as it generally runs in bunches—to-day it may be worth 50s. per fm., to-morrow not more than 10, or perhaps 5s.; and as we have not much ground laid open to any great depth, and the mine just in its infancy, we cannot state so correctly as though we had levels driven and ground divided in proportion like mode of working, which shall ultimately do. However, I can state so far as this—that we are at present much more than paying cost; and, if the lode continues to rise, we shall gradually increase our returns by the same outlay. I will be careful not to raise the expectations of the shareholders beyond the mark, but I think I may venture to say that I shall make good my former statements, as to the returns of tin by the end of March. I hope our wind-engine will be in working order in the course of a day or two; it is a new invention, and we must be cautious not to make more haste than good speed: I am certain that it will make a great saving to the mine. I hope, ere long, that Wheal Vincent will become a lasting dividend-paying mine—in fact, it cannot fail, if the lode continues.—*March 7th.*—The north lode is greatly improved, both in size and quality: driving east, it is now 3 ft. wide, with most splendid work; I broke, last evening, some very rich tin, from a branch dropping into the lode going east. The lode driving west is altogether 7 ft. wide, good work. We intend to try around our wind engine on Saturday. We are now taking down the south lode in different parts, which I shall fully detail in next week's report.

FOREIGN MINES.

COPAIPO MINES.—The following is the mine report for November:—

COPAIPO MINES—CHILE.—In this mine we have had few alterations in the past month. The 20 fm. level, east of Harman's shaft, continues to yield some very good ore, but the lode is narrower than when last reported on, being only 15 in. wide, but such changes in mining are of daily occurrence. In the 12 fm. level we have had a good lode, which still promises to continue for some time, and we have every reason to believe will improve; it is now about 20 in. wide, and of a superior quality. In the 40 fm. level the lode is large—say, 3 ft. wide—and producing some excellent ore, but still continues to be split into branches; should it become a little narrower, and the ore more concentrated, I have no doubt we shall find it to yield a good supply of rich ore for some time. The slopes are yielding as well, or rather better, than I had expected; and now, with an increased force, I hope shortly to have to report a corresponding produce.

LA COMPANA.—In my last report I informed you that I had sent tools, provisions, &c., &c., to commence the working of this mine with spirit, and I have now the pleasure of informing you that we have since set to work in good earnest, to sink a shaft on each of the two large lodes running through this sett, and are breaking some excellent ore, but as we have not been able to dress or prepare it, I cannot report to you the quantity, but will do so in my next; this I can say, that there is every prospect of its becoming a very important mine.—*Product for Nov.: Chico, 40 tons; San Pedro, 14—54 tons.*

SILVER MINES—AL FIN HALADALA.—On the 17th we commenced breaking down the lode in the upper, or 5 fm. level, at picos No. 3, and on the 19th I went into the mine and examined it, and found the lode about 2 ft. wide, of ore that will produce at least 200 mcs. per cajon; we estimate the breaking down from this level will be about 6 cajons, or 18 tons.

We have five other levels with silver in sight, and from the quality of the lode described, about 70 varas, we are expecting that, by the 10th proximo, we shall have not less than 60 tons broken and prepared for carrying to the amalgamation establishment. Various are the opinions as to the average quality, but it is a matter of such uncertainty, that I do not feel myself at liberty to risk an opinion. I have no doubt of its being good.

SAN JOSE DEL CARMEN.—Since I last addressed you we have had an improvement in after yielding about 3 tons of rich ore, which is now being amalgamated. It was cut by a team of horses, which at first proved to be a grand discovery, being so near the surface, but with only 150 mcs. per cajon. At the adit level we have had a large lode, 3 ft. wide, of ore, in which we have a good grey lode, the remainder has only been of a promising character; in this circumstance we may expect to have ore at a deeper level. About 3 fathoms behind the present on we have commenced sinking a winze, and are down about 1 fm.; the lode is about 2 ft. wide, producing muriatic and stones of ore; and are down about 1 fm. in, and are driving northward, where we expect shortly to have a rich bunch of ore; this mine has produced about 200 mcs. per cajon.

Various are the opinions as to the average quality, but it is a matter of such uncertainty, that I do not feel myself at liberty to risk an opinion. I have no doubt of its being good.

CARMEN ALTO AND PIZARRA.—Of all the lodes that I have ever seen since I have been in Chile, I never beheld one that I admiringly think the vein we have now in the 16 fm. level at this mine; it is 5 ft. wide, and a silver ore. I have had an assay made of the average, and it produced 180 mcs. per cajon. At the adit level we have had a large lode, 3 ft. wide, of ore, in which we have a good grey lode, the remainder has only been of a promising character; in this circumstance we may expect to have ore at a deeper level. About 3 fathoms behind the present on we have commenced sinking a winze, and are down about 1 fm. in, and are driving northward, where we expect shortly to have a rich bunch of ore; this mine has produced about 200 mcs. per cajon.

COLORADO.—This mine has not been wrought with that spirit I could wish in the last month, on account of a want of labourers to carry out the stuff; we have, therefore, been sinking and driving with only one man in a level or winze, where we ought to have had two or three, particularly now that we have such favourable ground, and such a fine vein that holds out so much promise. I hope, however, that we shall be able to do more in the ensuing month, and that the results of our labour will be something good, for we have certainly every reason to hope for it.

MERCEDITAS.—In my last I informed you that I had received a letter from the captain of this mine, advising that an improvement had taken place. On my arrival there, I found that, after breaking out about half a ton of ore, the lode had become poor. I am happy, however, to inform you that it is again improved, and I think, now likely to continue more productive for a longer time. The lode is now about 1 ft. wide, giving some good ore, and I have great hopes for it when we break it down again it will yield a good produce.

TRANSITO.—We have sunk a shaft in this mine to about the depth of 20 fms. on the lode, which is still of a good width, but finding that there are several other veins nearly parallel, we have commenced driving a cross-cut to intersect them, with a view of ascertaining which is the most promising to sink deeper upon, and with a hope of finding some of them productive, even at this level; we have confined our operations here to this for the present.

GOLD MINES—ESPERANZA.—I have before advised that we have two gold lodes, and one of silver, in this sett, and in one of the former we are sinking a winze, which looks remarkably pretty; it is 3 ft. wide, and most of it ore that produces gold of low quality—still we have great hopes that the ore will soon improve. The silver lode is one of the prettiest I have seen, and, I think, cannot fail to make rich in depth.

SANTO DOMINGO.—I have confined our operations here to the driving of an adit level only, until we can determine whether or not it will be prudent to build an establishment at Piquitos for the reducing of the gold ore of low or inferior quality; this adit will come in under our former workings, leaving more than 20 fms. of backs, and the lode in it is now about 1 fm. wide, all of which will be visible when polished and washed.

DESCABURDO.—I am fully persuaded that if we had the management of this mine we could make good returns, but as the company's share

and hope, at succeeding meetings, to have to announce such additional discoveries as shall insure to them lastingly profitable results from Wheal Russell.

SHARP TOR.—A meeting of the managers of this company took place on Thursday, when it was resolved at once to fix a 30-in. steam-engine, in order to prosecute this promising adventure to a greater depth. The shaft at its present bottom (15 fms.) presents a more promising appearance, and indicates a most lasting and profitable mine. The finances looked most encouragingly, as there was cash in hand for the next three months' workings. The manager, Mr. J. H. Hitchins, of the Devon Consols, was deputed to endeavour to look out for a second-hand engine, and report to the managing committee.

SOUTH WHEAL FRANCIS.—The statement of accounts for Dec. and Jan. shows—By ores sold, 29,577. 3d. 2s.; tin, 753. 10s. 8d.; property tax on dues, 21. 4s. 4d.—8717. 18s. 2d.—To labour cost, 1259. 0s. 1d.; merchants' bills, 363. 1s. 4d.; dues, 247. 7s. 6d.; income tax, half-year, 72. 18s. 4d.—balance, 1775. 10s. 1d.; add balance, end of November, 932. 0s. 7d.—2708. 0s. 6d.: deducted dividend of 12. 10s. per share, 1550., leaves a balance of 1158. 0s. 6d.

EAST BULLER.—A meeting of adventurers was held at Penstruthal account-house, on the 27th February, when the accounts were produced, showing balance of 410. 3s. 8d. due to pier. A call of 17 per share was made. Capt. James Higgins was appointed captain at a salary of 4f. 4s. per month, with the understanding that he be allowed to devote a portion of his time to the adjoining mine, Bell and Penstruthal.

GREAT WORK.—A meeting of adventurers took place on the 27th February, when the accounts for Oct., Nov., and Dec. were allowed, showing—By balance at the end of September, 2761. 12s. 2d.; ores sold, 3467. 1s. 9d.; materials sold, 199. 12s. 1d.—3943. 1s. 10d.—To costs, &c., 2361. 12s. 1d.; dividend of 10s. per share, 1190. 2s. 1d.—3531. 12s. 1d.; add balance, end of December, 932. 0s. 7d.—2708. 0s. 6d.: deducted dividend of 12. 10s. per share, 1550., leaves a balance of 1158. 0s. 6d.

WHEAL COMFORT.—A meeting of adventurers was held in Wheal Buller account-house, on the 1st March, when the accounts were presented and passed. The accounts showed—Balance from last account, 244. 0s. 1d.; ores sold (less dues), 6610. 2s. 1d.—1507. 2s. 1d.—To costs and merchants' bills for December and January, 873. 7s. 9d.; dividend of 3s. per share, 3847. 12s. 9d.; balance in favour of adventurers, 249. 1s. 4d.—A dividend of 3s. per share was declared.

EAST WHEAL ROSE.—A meeting of adventurers was held at Pearce's Royal Hotel, Truro, on the 7th March, when the accounts were presented and passed. The accounts showed—Balances from last account, 2662. 9s. 7d.; ores sold (less dues), 6610. 2s. 1d.—1507. 2s. 1d.—To costs and merchants' bills for December and January, 873. 7s. 9d.; dividend of 3s. per share, 3847. 12s. 9d.; balance in favour of adventurers, 249. 1s. 4d.—A dividend of 3s. per share was declared.

CARADON VALE MINE.

SIR.—Observing, in last week's Journal, an advertisement of a company about to be established by the above name, in St. Ives's parish, Cornwall, I was instrumental, with others, in procuring the opinion of Mr. Robert Dunstan (the agent of West Caradon), feeling assured that, from his experience in the working of the lodes in that district, I should fully understand whether the mine so called is worthy of the distinction named in the prospectus. I am happy to state, that Mr. Dunstan's report and remarks are of the most favourable description.—HENRY TRAER: Stoke, Devon, March 5.

[Capt. Dunstan's report will be found among our "Mining Correspondence."]

SHARE JOBBING—TINCROFT SHARES.

SIR.—In your Journal of Saturday last, under the head of "Share Jobbing," you have published a report of an action, as tried in the Lord Mayor's Court, on the 23d Feb. (Brown v. Byron), which I beg to state is totally at variance, not only with the evidence adduced, but also with the real merits of the transaction. I, therefore, request the favour of your giving insertion to the following facts—viz.: that on the 6th August last I employed Mr. Brown, as my agent, to sell 25 Tincroft shares, at the limit of 10s. 2s. 6d. per share; for so doing, it was agreed to charge me a commission of 1s. 3d. per share. It was, however, represented by Mr. Brown's clerk that he could obtain no more than 10s. per share—whereas, on the contrary, he had previously been offered, and did obtain, 10s. 2s. 6d. per share. This fact having come to my knowledge, I immediately went to Mr. Brown's office, and remonstrated with his clerk for having wilfully deceived me in the matter, and demanded to be furnished with a "contract" at the price he had sold the shares for; this was *insolently* refused me, and, under such circumstances, I repudiated the transaction. The shares were subsequently sold by Mr. James Lane, at my request, at 10s. 7s. 6d. per share, on the very same day, to whom the shares were delivered, and paid for on the following day, and not to a person of the name of Balcombe, as erroneously stated in your report. I beg further to state, that had your reporter been present at the trial, he would have been informed by the Recorder, in the summing up of the case to the jury, and proved by the plaintiff's own witnesses, that an attempt had been made to defraud, or cheat, me out of 2s. 6d. per share, and that I was, therefore, perfectly and legally justified in repudiating the transaction. On such evidence the Recorder directed the jury to re-

MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

MULLION, NEAR HELESTON.—During the past week, another sett has been obtained adjoining the Wheal Trenance Mines, in this parish, by a party of principally Cornish adventurers, for the purpose of starting another copper mine, under the management of Captain Hensley, of Marazion. The works on the Wheal Trenance Mines are now in a very forward state, and on the starting of the first steam-engine on this speculation, the whole of the people employed in this adventure were liberally provided on Saturday last, by their spirited manager, Mr. Richard Dalton, with good old English fare, roast beef and pudding, together with as much bread and cheese and beer as each individual could make use of. The spread was at two o'clock, in a long room on the mine, and the regulations were carried out by the directors, the captain, and Mr. William Nicholas, of Mullion. Dinner being over, the health of the adventurers was proposed and received by the party with the greatest enthusiasm. The health of the resident director, and the directors in London, was also drunk and responded to, and the afternoon was spent in a very convivial and pleasant manner. The working of the different mines in this parish must prove a great boon to the inhabitants, particularly in this time of agricultural depression. It is the opinion in this locality that the most sanguine expectations of the spirited adventurers will be realized, and that it will lead to its becoming a great mining district.

KESWICK.—The accounts from these mines are very favourable, and there is every reason to believe that they will shortly be in a remunerative position. At the Brandley Mine the lode is of a very promising character, with a string of nearly solid lead ore, 6 in. in width.

WHEAL CARPENTER (GWIENEAR).—Within the last few days a very valuable discovery has been made here; it consists of a rich course of grey copper ore, yielding 80 per cent. fine copper, cut in the 17 fm. level—a splendid specimen of it I saw yesterday in the office of Mr. G. J. Phillips, Camborne. I understand that, in consequence of this good fortune for the adventurers, the shares (256ths.) are in great demand. It is probable that this circumstance will give an impetus to mining in that locality, which has furnished several good mines—viz.: Herland, Great Wheal Alfred, &c.

[From the *Plymouth Journal*.]

It is very gratifying to find that the mining interest in this locality not only retains its position but advances. In the district of Liskeard, the recent discovery in the 120 fm. level, of a lode in the Phoenix (late Chilcombe) Mines, estimated to be worth 80f. per fm., has given great encouragement. A good discovery (lead) is also reported in Butcherdon, and the mines, as a whole, are looking well, and there is an active enquiry for mining property. In our own district we have nothing very new to report, except that Sir Ralph Lopes, having permanently lowered the dues on Wheal Franco to an 18th, and granted the Wheal Masey sett to the spirited adventurers in that undertaking, operations will there be resumed with spirit, the shafts sunk, and the mine more fully explored. The liberal example of Sir Ralph was, we understand, followed by Mr. R. Spy. The Wheal Anderton adventurers have determined on prosecuting their mine for three months longer, and have made a call of 17. 10s. per share for that purpose. It was, we understand, suggested that this sett should be worked in conjunction with the Tavistock Consols, and both companies remedied, thus holding out a sufficient inducement to the united companies to drive cross-cuts from the engine to intersect the four large lodes seen in the Tavistock Consols (late Wheal Ash, &c.) setts, at a depth of upwards of 100 fms. from the surface, and thus out of the two concerns making one of the grandest undertakings in the west. The lode lately discovered on the land of William Wymond, Esq., at Elbridge, near Cargreen, and which, we understand, is to be called Wheal Jane, continues to attract general attention amongst miners, and improves as it gets down into settled ground; it is a master lode, about 48 feet wide, and the walls very clear and distinct. Large rocks of lead, very rich in silver, are being constantly brought up, which are broken 6 fms. under the surface. Wheal Russel continues to improve, and bids fair to be a good mine. The West Bedford United, which includes the Gunnis Lake sett, and the western part of Bedford United, is to be set at work, and shares are in request. At Hawkmoor the engine-shaft is 10 fms. under the adit level (the 20), and the lode is very good, producing about 7 tons of ore of excellent quality per fm. The 30 fm. level will lay open a large extent of tributary ground. The Messrs. Carew, who are we understand, the principal holders in this mine, have conducted it with much spirit, and we rejoice to see their labour crowned with success. Wheal Providence, in South Sydenham, has been resumed, and a very fine course of lead cut in the adit level, worth 20f. per fm. The adit has been extended nearly 270 fms. on a small lode, parallel to that just cut, so that this mine will be opened at a nominal cost. The engine-shaft has been sunk 30 fms. under the adit, but this lode has not been cut, nor was it, as far as we are aware, before known. The eastern part of Plymouth Wheal Yeoland continues to be the most promising and most productive. Preparation is making for opening Wheal Gennys, and the mine on Castle Farm. With the increased activity which at this moment pervades the mining world, we are happy to observe more of caution and business-like habit, and we venture to hope and believe that there will not be again such extravagant surface expenditure as in by-gone days.

TAVISTOCK CONSOLS.—We have for the last fortnight, for the purpose of expedition driven the adit by the side of the lode, the ground being much softer than the lode which has been cut through, and is composed of muriac, spar, and peat, and is letting down a very large stream of water—it is a very kindly lode.

COAL MARKET, LONDON.

MONDAY.—Buddell's West Hartley 15—Carr's Hartley 15—Chester Main 14 3—Davidson's West Hartley 15—East Adair's Main 11—Hastings Hartley 14 9—Holywell 16 6—Ravenworth's West Hartley 14—South Poole 13 6—Towyn 15—West Hartley 15 6—Wall's End Acorn Close 15 6—Brown 13 9—Browne's 6s. 13—Hotspur 14 6—Hilda 14 9—Gibson's 15—Eden Main 16 11—Hettom 17 6—Hawell 17 9—Russell's 17—Heaton 15—West Belmont 15 9—West Heaton 15 6—Whitworth 14—Maclean's Tees 14 6—South Durham 15 6—Tees 17 6—Birchgrove Grangola 21—Cowpen Hartley 15—Hartley 14—Howard's West Hartley Netherthorn 15—Langmennock 25—Sidney's Hartley 15.—Ships at market, 342; sold, 85.

ACCIDENTS.

Carban Clay-works.—As Thomas Jullif was following his employ, some earth fell on him and buried him. He was taken out alive, but died of the injuries he had received.

Par Consols.—As John Lord was removing some old workings from the shaft, he was caught by a rope, and drawn into the machinery. One of his arms was pulled off, an other crushed to pieces.

Linkinhorne.—As W. Phillips was standing with two companions on a board place across the shaft in the 90 fm. level, a ladder came away from the upper part of the shaft and struck the board on which they were standing, when Phillips fell into the shaft below, about 8 fms. The two others were saved by holding on by the side of the shaft. A comrade, named Richards, went down immediately, and found that deceased had fallen into the water, when he dived, and brought him up: being alive, he was brought to grans, where medical aid was in readiness; he was removed to his home, but never spoke, and died in consequence of the injuries he had received on his head in falling.

West Bromwich—Shocking Occurrence at a Colliery.—A painful instance of that disregard for the safety of life and limb which is not frequently exemplified among the colliers of South Staffordshire, occurred at Messrs. Tidesey and Botteley's West Hall Colliery. The majority of the men descended the pit at the usual hour, but shortly afterwards two who were late in coming to work, got into an empty skip, which was going down for coal, to be lowered with it. They were advised to go down one at a time, and to use some tackling, to render their descent more safe, as such a skip was not fitted for being so used, but both these recommendations they disregarded. When they had got about half way down the shaft, the iron bow of the skip snapped asunder, and it fell to the bottom, by which one of the men was immediately killed, and the other much injured.

Birmingham Journal.

Wednesday.—Abraham Gold was killed in a coal-pit belonging to Scott and Foley. He had been knocking out the "lams," or wedges, without taking the usual precaution of having a man to listen and give warning, when the coal fell upon him and buried him.

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Buddell's West Hartley 15—Carr's Hartley 15—Chester Main 14 3—Davidson's West Hartley 15—East Adair's Main 11—Hastings Hartley 14 9—Holywell 16 6—Ravenworth's West Hartley 14—South Poole 13 6—Towyn 15—West Hartley 15 6—Wall's End Acorn Close 15 6—Brown 13 9—Browne's 6s. 13—Hotspur 14 6—Hilda 14 9—Gibson's 15—Eden Main 16 11—Bell 15 6—Belmont 16—Bradly 16 6—Haswell 17 6—Jonasson's 14 6—Lambton 17 6—Heselden 15 6—Kelloe 16 6—South Keloe 15—Thornley 16—West Hettom 15—Cowden Tees 14 9—Maclean's Tees 11—Seymour Tees 15—South Durham 15—Birchgrove Grangola 21—Cowpen Hartley 15—Dewerton's Hartley 15—Hartley 14—Howard's West Hartley Netherthorn 15—Sidney's Hartley 14 9—Ships at market, 342; sold, 85.

WEDNESDAY.—Carr's Hartley 15—Chester Main 14—Davidson's West Hartley 15—East Adair's Main 12 6—Hastings Hartley 14 6—New Tanfield 13 6—Old Tanfield 13—Ravenworth's West Hartley 14—South Poole 13—Tanfield Moor 15—Tanfield Moor 13 6—Walker's Primrose 13—Wall's End Brown 13 6—Hilda 14 6—Killingworth 14 3—Eden Main 16 6—Bell 15 6—Belmont 16—Bradly 16 6—Haswell 17 6—Jonasson's 14 6—Lambton 17 6—Heselden 15 6—Kelloe 16 6—South Keloe 15—Thornley 16—West Hettom 15—Cowden Tees 14 9—Maclean's Tees 13 6—St. Helen's Tees 13 6—Tees 17—Birchgrove Grangola 21—Cowpen Hartley 15—Dewerton's Hartley 15—Hartley 14—Howard's West Hartley Netherthorn 15—Sidney's Hartley 14 9—Ships at market, 342; sold, 85.

FRIDAY.—Carr's Hartley 15—Chester Main 12 6—Davidson's West Hartley 15—Adair's Main 12 6—Hastings Hartley 14 9—New Tanfield 13 6—Old Tanfield 13—Ravenworth's West Hartley 14—South Poole 13—Tanfield Moor 15—Tanfield Moor 13 6—Walker's Primrose 13—Wall's End Brown 13 6—Hilda 14 6—Killingworth 14 3—Eden Main 16 6—Bell 15 6—Belmont 16—Bradly 16 6—Haswell 17 6—Jonasson's 14 6—Lambton 17 6—Heselden 15 6—Kelloe 16 6—South Keloe 15—Thornley 16—West Hettom 15—Cowden Tees 14 9—Maclean's Tees 13 6—St. Helen's Tees 13 6—Tees 17—Birchgrove Grangola 21—Cowpen Hartley 15—Hartley 14 9—Howard's West Hartley Netherthorn 15—Sidney's Hartley 14 9—Ships at market, 290; sold, 67.

BOARD OF TRADE RETURNS.

The official accounts of the trade and navigation of the United Kingdom, for the month ended 5th February, possess more than ordinary interest, as being the first returns published since the repeal of the Navigation Laws. By these tables, it is evident that trade has not suffered by the removal of those restrictions, which were so many trammels on its operations; but, on the contrary, it has exhibited an expansiveness which is to be attributed entirely to its perfect freedom; and the imports, as well as exports, have been increased thereby in a very remarkable degree. The exports of the month amount to 4,069,431, against 3,211,146, last year, and 3,373,713, in the same period of 1848—the great increase being exhibited in cotton manufactures, woollen cloths, hardware and cutlery, metals, and machinery.—Among the importations of foreign and colonial merchandise are shown the following:—

	MONTH ENDED 5TH FEB.
Metals—Copper ore	Tons 1,024
" Copper	Cwt. 2,047
" Iron	Tons 1,070
" Steel	Tons 1,657
" Lead	Tons 28
" Spelter	Tons 33
Quicksilver	Lbs. 84
	40,842

The following table shows at a glance the value of the exports of each of the undermentioned articles:—

	1848.	1849.	1850.
Coals and culm	£70,000	£61,076	£57,262
Earthware	57,942	51,827	73,480
Hardware and cutlery	161,529	112,087	186,021
MACHINERY—Steam-engines	7,822	4,060	50,226
METALS—Other sorts	32,375	14,040	29,364
" Bar, bolt, and rod	157,344	85,239	187,565
" Wire	2,365	2,262	3,476
" Cast	20,407	7,312	11,004
" Wrought	78,065	59,474	75,784
" Steel	22,830</td		

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning Eleven o'clock.

Bank Stock, 7 per Cent., 207½	Bulgarian, 4½ per Cent., 90½ 90
3 per Cent. Reduced Ann., 95½ 6½	Dutch, 2½ per Cent., 55½
3 per Cent. Consols Ann., 95½ 6½	Brasilian, 5 per Cent., 90½
2½ per Cent. Ann., 98½ 9½	Chilian, 6 per Cent., 100½
Mexican 5 per Cent., on Corp., 29½	Russian, 6 per Cent., 100½ 7½
Long Annun., 8½	Spanish, 6 per Cent., 17½
India Stock, 10½ per Cent., 268 5½	Ditto 3 per Cent., 30½
3 per Cent. Consols for 13th Mar. 95½ 6½	
Eshieg. Bills, 1000£, 1d. 55 pm.	

MINES.—An average amount of business has been transacted this week, and the accounts from the mines generally are of a most cheering character.

In Devon Great Consols several shares have changed hands at an advanced price. Trevikey and Barrier have been in demand, and business done at a considerable advance, arising from some very important improvements.

Cudronnour, East Pool, South Basset, and South Tolgas, have also been in request. Herodsfoot is represented to have improved, especially in the 94 north, and the 82 south.

There has been an inquiry for Tincroft, and several shares have changed hands at an advance. Since last week's report a very important and valuable discovery has been made; in driving a cross-cut north from the 80 fm. level, they have intersected a new lode (now called Grant's lode), and from the last account they have driven 5 feet into it, and no appearance of the north wall. The lode is estimated as worth from 500£ to 600£ per fm. A cross-cut has also been commenced in the 70, to intersect it at that point. At North Tincroft engine-shaft, sinking under the 100 fm. level, the lode is 7 ft. wide, worth 350£ per fm. Other parts of the mine continue productive.

In Great Rough Tor Consols an important improvement has taken place; in driving a cross-cut in the 45 fm. level east, they have intersected a large and productive lode, having every appearance of further improvement.

Among the several improving mines in Wales, we may notice Esgair Lle, Daren, Court Grange, Llwynmales, East Daren, &c.; and we learn that Penybont and Ergoedd Mines have been taken up by an influential company, with a view of working spiritedly.

At North Friendship they have discovered a very productive lode, now rich for lead; this discovery will prove highly advantageous for Kingsett and Bedford, as the lode runs through the latter set for 400 fm.

At Wheal Comfort meeting, a dividend of 9d. per share was declared.

At South Frances usual bi-monthly meeting, a dividend of 12½-10s. per share was declared for the months of December and January: leaving a balance of 1158£ to credit of next account. A profit of 1775£ 10s. was made on the two months' working; and the mine is represented as being in a highly gratifying position.

The Goginan Mines declared the usual bi-monthly dividend of 500£ for December and January, being 5d. per share, payable at the offices of Messrs. John Taylor and Son.

At North Wheal Friendship meeting, the accounts for three months were audited, and a balance of 126£ 17s. 9d. found in favour of the mine; but, in consequence of some heavy law charges attendant upon the preparation of the leases, a call of 10s. per share was made, for paying off the same.

At East Wheal Rose meeting, a dividend of 15d. per share was declared.

Wheal Russell account for three months, was held on the 21st Feb., when a balance of 336£ 1s. 5d. was shown against the adventurers, and a call of 10s. per share was made.

At the East Buller bi-monthly account, a balance of 410£ 3s. 8d. was due to the purser, and a call of 12s. per share was made.

At the meeting of South Wheal Josiah, the accounts showed balance in favour of adventurers (supposing all calls paid) of only 982 6s. A tardy act of justice to the honest adventurers was resolved on—that of absolute forfeiture of all shares on which exist outstanding calls. When it is considered how many highly promising undertakings have been eventually "knocked," from indecisive conduct in this respect, it is to be hoped the managers of this mine will not subject themselves to censure, should such fate result on their proceedings.

At Great Work meeting, the profit on the workings of Oct., Nov., and Dec., allowed a dividend of 10d. per share being declared.

At the Llwynmales bi-monthly meeting, the accounts showed balance of 118£ in favour of adventurers. The report from the mine is highly favourable, upwards of 20 tons of lead being ready for sale, and 20 more were expected to be ready by the first week in March. The steam-engine will be completed by the 1st May, when the returns will be considerably increased. An improvement has recently been made, by the discovery of a lode 14 in. wide, solid lead.

A few weeks since, we noticed the discovery of a rich vein of lead near the surface at Landauflin, which attracted considerable attention at the time. We are able to give the following state of the progress being made:—"Wymond's shaft has been sunk 65 fathoms, on the course of the lode; the lode is full 4 ft. big, composed of rich silver-lead ores, prian, quartz, and a few spots of manganic. The rocks of lead ore are from 56 to 100 lbs in a rock; and the underlie of the lode is 2 ft. 4 in. per fathom; the walls are perfectly regular, without a warp."

A report from Penzance, in giving a summary of business transacted in the locality, states that Bodtallack shares have been in request, and dicne at an advance; Wheal Reeth had improved in price; West Wheal Treasury had very considerably improved. In Penzance Consols a large amount of business has been transacted, and the mine is represented as in a very productive and highly promising position. An ineffectual attempt had been made to amalgamate and work conjointly the Boswidden and Nanpean sets. The mines in the neighbourhood of Redruth, Illogan, and Gwennap, are stated to be looking remarkably well, and mining generally was in a gratifying and encouraging position.

The failure of Messrs. B. Smith and Son, of Bow, copper smelters, was announced on Wednesday last. From inquiries which we have made, we do not learn that any of our home mines are likely to suffer.

Shares in the following mines have changed hands since our last:—Devon Great Consols, Trevikey and Barrier, South Basset, Alfred Consols, Condor, Trelawny, South Tolgas, Tincroft, Drake Walls, Pendarves, Penzance Consols, Esgair Lle, Trehane, Trethellan, Mary Ann, Sharp Tor, Daren, West Wheal Treasury, Gustavus, West Providence, East Buller, Wheal Henry, Stray Park, Tremayne, Kewick, West Tolgas, Kirkcudbright, Callington, Herodsfoot, &c.

In Foreign Mines, the chief business has been in United Mexican, Copiapo St. John del Rey, and Linares, in which a fair proportion has been done.

The Copiapo report for November has been received. The Checo and San Pedro Copper Mines continue productive; in the latter an improvement had taken place. The produce for the month, from the two mines, is given at 54 tons. The silver mines of Al Fin Hallada and San Jose del Carmen are producing some rich silver ore; whilst those of Carmen Alto and Plomiza contains an extraordinary rich vein, producing 18 marcas per cajon. The mines of Santa Anna, Colorado, and Merceditas, are spoken favourably of; but the want of labourers to prosecute the operations appears to be severely felt. The gold mines hold much promise also.

Advices have been received from the Linares Mines to the 27th ult., and the operations are represented as continuing to progress highly satisfactorily; an improvement had taken place in one of the pitches, now worth 4 tons to the fm.

COMPANY OF COPPER MINES IN ENGLAND.—There is every probability that the arrangements for the resuscitation of this ancient company will shortly be definitively settled. A meeting of debenture-holders was held at the offices on Thursday, the 6th inst., when a committee from that body was appointed to act with the shareholders. As the bill to amend the constitution of the company has already been read a second time, it is confidently expected that all arrangements will be matured, in order to be laid before the annual meeting, which will take place early in the ensuing month.

RUSSIAN GOLD.—In another column, we insert some particulars respecting the product of the precious metals in Russia, which will be perused with interest. We also find it stated, in the continental papers, that in consequence of the great quantity of produce extracted from the Ural Mines, the Emperor of Russia has, by an Ukase, recently established at Cronstadt an Imperial entrepot for the deposit of metallic productions, consisting of gold. Since the receipt at St. Petersburg of large accessions of the precious metals, there remained in the entrepot of that capital a very large aggregate—the produce of the mines of the Ural and the Lena. The amount named is 400,000,000 of gold, silver roubles of the value of less than a shilling each (say, 9d. or 10d., making a sum of 15,000,000 sterling), being, we presume, the coin in which it is estimated.

CONTRACT FOR COALS FOR THE MEDITERRANEAN.—The commissioners of the Admiralty will receive on the 19th inst., tenders for delivering at Gibraltar 2600 tons of coal, and at Malta 12,000 tons, for the service of her Majesty's steam-vessels.

SALE OF MINING SHARES.—The shares in the Callington Mining Company, submitted to sale by auction, at the Mart, by Mr. C. Warton, on Wednesday last, realised as follows:—Two shares, on which 25d. each had been paid, sold at 41. 10s. per share; two lots of five and ten shares, 41. 7s. 6d. each; one lot of ten shares, 41. 10s.; two lots of ten shares, 41. 12s. 6d.

ARRIVALS OF SILVER COPPER, &c.—The following arrivals took place on Monday:—The vessel *Sonda*, arrived in the docks from Hong Kong and Whampoa respectively, brought from the former place 38 boxes of silver, consigned to order; the vessel *Isabella Blyth*, from the Mauritius, a case of bullion, addressed; and the ship *Stately*, arrived from Coquimbo and Valparaiso, has brought the very large quantity of 66,928 ingots of copper, consigned to an eminent firm in the metropolis.

PRICES OF MINING SHARES.

BRITISH MINES.			
Shares.	Company.	Paid.	Price.
10000 Aberglaslyn	9 0	6	204
1024 Alfred Consols	8 2	15	9000 South Tamar
1024 Arnside	2 1	12	120 South Caradon
1024 Ashtonbury United Mines	9 1	12	1100 South Dolcoath
1024 Balaesiddon	9	16	256 St. Friendish, W. Camb.
128 Balloons Consols	4 2	50	256 South Tolgus
5000 Barristown	5 2	4 5	256 South Trelewany
3650 Baydon	4 2	4 2	2000 South Wales Mining Co.
6000 Beauly	1	1	128 South Wheat Bassett
128 Birch Tor & Vithor	10 2	6 7	128 South Wh. Frances
5000 Black Craig & Craigton	3	10	5000 Black Wh. Josiah
5000 Blaenavon	50	10	5000 Blaenavon
5000 Blisland Consols	1	8	10000 Southern & Western, Irish
1024 Bodmin Consols	3	34	280 Speaner Moor
6000 Bodmin Moor Consols	1	8	94 St. Ives Consols
6000 Bodmin	1	1	128 St. Michael Penkivel
1024 Bodmin	3 1	4 2	998 St. Milver Consols
6000 Bedford	1	1	1000 Newry Park
128 Birchen	5 2	5 5	10000 Northern & Western, Irish
1024 Birch Tor & Vithor	10 2	6 7	280 Speaner Moor
5000 Black Craig & Craigton	3	10	94 St. Ives Consols
5000 Blaenavon	50	10	128 St. Michael Penkivel
5000 Blisland Consols	1	8	998 St. Milver Consols
6000 Bodmin	1	1	1000 Newry Park
1024 Bodmin	3 1	4 2	10000 Northern & Western, Irish
6000 Bodmin Moor Consols	1	8	280 Speaner Moor
1024 Bodmin	3 1	4 2	94 St. Ives Consols
6000 Bodmin	1	1	128 St. Michael Penkivel
1024 Bodmin	3 1	4 2	998 St. Milver Consols
6000 Bodmin	1	1	1000 Newry Park
1024 Bodmin	3 1	4 2	10000 Northern & Western, Irish
6000 Bodmin Moor Consols	1	8	280 Speaner Moor
1024 Bodmin	3 1	4 2	94 St. Ives Consols
6000 Bodmin	1	1	128 St. Michael Penkivel
1024 Bodmin	3 1	4 2	998 St. Milver Consols
6000 Bodmin	1	1	1000 Newry Park
1024 Bodmin	3 1	4 2	10000 Northern & Western, Irish
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6000 Bodmin Moor Consols	1	8	280 Speaner Moor
1024 Bodmin	3 1	4 2	94 St. Ives Consols
6000 Bodmin	1	1	128 St. Michael Penkivel
1024 Bodmin	3 1	4 2	998 St. Milver Consols
6000 Bodmin	1	1	10

and hope, at succeeding meetings, to have to announce such additional discoveries as shall insure to them lastingly profitable results from Wheal Russell.

SHARE TOW.—A meeting of the managers of this company took place on Thursday, when it was resolved at once to fix a 30-in steam-engine, in order to prosecute this promising adventure to a greater depth. The shaft at its present bottom (15 fms.) presents a more promising appearance, and indicates a most lasting and profitable mine. The finances looked most encouragingly, as there was cash in hand for the next three months' workings. The manager, Mr. J. H. Hitchins, of the Devon Consols, was deputed to endeavour to look out for a second-hand engine, and report to the managing committee.

SOUTH WHEAL FRANCIS.—The statement of accounts for Dec. and Jan. shows—By ores sold, 2957L 8s. 2d.; tin, 753L 10s. 8d.; property tax on dues, 7L 4s. 4d.; 3717L 18s. 2d.; To labour cost, 1259L 0s. 1d.; merchants' bills, 382L 1s. 4d.; dues, 247L 7s. 6d.; income tax, half-year, 72L 18s. 4d.—balance, 1775L 10s. 1d.; add balance, end of November, 932L 9s. 7d.—2708L 0s. 6d.; deducted dividend of 12L 10s. per share, 1550L leaves a balance of 1158L 0s. 6d.

EAST BULLER.—A meeting of adventurers was held at Penstruthall account-house, on the 27th February, when the accounts were produced, showing balance of 410L 3s. 8d. due to pursuer. A call of 1L per share was made. Capt. James Higgins was appointed captain at a salary of 4L 4s. per month, with the understanding that he be allowed to devote a portion of his time to the adjoining mine, Bell and Penstruthall.

GREAT WORK.—A meeting of adventurers took place on the 27th February, when the accounts for Oct., Nov., and Dec. were allowed, showing—By balance at the end of September, 276L 12s. 2d.; ores sold, 3467L 12s. 9d.; materials sold, 159L 1s. 1d.; 394L 18s. 10d.—To costs, &c., 236L 12s. 1d.; dividend of 10s. per share, 1190L 0s. 355L 12s. 1d.; balance in favour of adventurers, 392L 3s. 11d.—A dividend of 10s. per share was declared.

WHEEL COMFORT.—A meeting of adventurers was held in Wheal Buller account-house, on the 1st March, when the accounts were presented and passed. The accounts showed—Balance from last account, 244L 0s. 1d.; ores sold (less dues), 610L 2s.; Cargoll adventurers for water charges, &c., 144L 1s. 3d.; proportion of profit in Cargoll, 336L 12s. 11d.—11,753L 6s. 9d.—To costs and merchants' bills, 639L 12s.; carriage of ore and consols, 159L 1s. 1d.; taxes, 228L 11s.; account of new steam-engines, 418L 0s.; dividend of 15s. per share, 1920L 2s. 4d.; leaving balance in favour of adventurers, 249L 1s. 1d.—A dividend of 15s. per share was declared.

EAST WHEEL ROSE.—A meeting of adventurers was held at Pearce's Royal Hotel, Truro, on the 7th March, when the accounts were presented and passed. The accounts showed—Balance from last account, 2662L 9s. 7d.; ores sold (less dues), 861L 2s.; Cargoll adventurers for water charges, &c., 144L 1s. 3d.; proportion of profit in Cargoll, 336L 12s. 11d.—11,753L 6s. 9d.—To costs, coals, and merchants' bills, 639L 12s.; carriage of ore and consols, 159L 1s. 1d.; taxes, 228L 11s.; account of new steam-engines, 418L 0s.; dividend of 15s. per share, 1920L 2s. 4d.; leaving balance in favour of adventurers, 263L 4s. 5d.—A dividend of 15s. per share was declared.

CARADON VALE MINE.

SIR,—Observing, in last week's Journal, an advertisement of a company about to be established by the above name, in St. Ives's parish, Cornwall, I was instrumental, with others, in procuring the opinion of Mr. Robert Dunstan (the agent of West Caradon), feeling assured that, from his experience in the working of the lodes in that district, I should fully understand whether the mine so called is worthy of the distinction named in the prospectus. I am happy to state, that Mr. Dunstan's report and remarks are of the most favourable description.—HENRY TRAER: Stoke, Devon, March 5.

[Capt. Dunstan's report will be found among our "Mining Correspondence."]

SHARE JOBBING—TINCROFT SHARES.

SIR,—In your Journal of Saturday last, under the head of "Share Jobbing," you have published a report of an action, tried in the Lord Mayor's Court, on the 23d Feb. (Brown v. Byron), which I beg to state totally at variance, not only with the evidence adduced, but also with the real merits of the transaction. I, therefore, request the favour of your giving insertion to the following facts—viz.: that on the 6th August last I employed Mr. Brown, as my agent, to sell 25 Tincroft shares, at the limit of 10L 2s. 6d. per share; for so doing, it was agreed to charge me a commission of 1s. 8d. per share. It was, however, represented by Mr. Brown's clerk that he could obtain no more than 10L per share—whereas, on the contrary, he had previously been offered, and did obtain, 10L 2s. 6d. per share. This fact having come to my knowledge, I immediately went to Mr. Brown's office, and remonstrated with his clerk for having wilfully deceived me in the matter, and demanded to be furnished with a "contract" at the price he had sold the shares for; this was insolently refused me, and, under such circumstances, I repudiated the transaction. The shares were subsequently sold by Mr. James Lane, at my request, at 10L 7s. 6d. per share, on the very same day, to whom the shares were delivered, and paid for on the following day, and not to a person of the name of Balcombe, as erroneously stated in your report. I beg further to state, that had your reporter been present at the trial, he would have been informed by the Recorder, in the summing up of the case to the jury, and proved by the plaintiff's own witnesses, that an attempt had been made to defraud, or cheat, me out of 2s. 6d. per share, and that I was, therefore, perfectly and legally justified in repudiating the transaction. On such evidence the Recorder directed the jury to re-

MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

MULLION, NEAR HALSTON.—During the past week, another sett has been obtained adjoining the Wheal Trenance Mines, in this parish, by a party of principally Cornish adventurers, for the purpose of starting another copper mine, under the management of Captain Hensley, of Marazion. The works on the Wheal Trenance Mines are now in a very forward state, and on the starting of the first steam-engine on this speculation, the whole of the people employed in this adventure were liberally provided on Saturday last, by their spirited manager, Mr. Richard Dalton, with good old English fare, roast beef and puddings, together with as much bread and cheese and beer as each individual could make use of. The spread was at two o'clock, in a long room on the mine, and the regulations were carried out by the directors, the captain, and Mr. William Nicholas, of Mullion. Dinner being over, the health of the adventurers was proposed and received by the party with the greatest enthusiasm. The health of the resident director, and the directors in London, was also drunk and responded to, and the afternoon was spent in a very convivial and pleasant manner. The working of the different mines in this parish must prove a great boon to the inhabitants, particularly in this time of agricultural depression. It is the opinion in this locality that the most sanguine expectations of the spirited adventurers will be realised, and that it will lead to its becoming a great mining district.

KESWICK.—The accounts from these mines are very favourable, and there is every reason to believe that they will shortly be in a remunerative position. At the Brandley Mine the lode is of a very promising character, with a string of nearly solid lead ore, 6 in. in width.

WHEAL CARPENTER (GWINNEAR).—Within the last few days a very valuable discovery has been made here; it consists of a rich course of grey copper ore, yielding 80 per cent. of fine copper, cut in the 15 ft. level—a splendid specimen of it I saw yesterday in the office of Mr. G. J. Phillips, Camborne. I understand that, in consequence of this good fortune for the adventurers, the shares (256ths.) are in great demand. It is probable that this circumstance will give an impetus to mining in that locality, which has furnished several good mines—viz.: Herland, Great Wheal Alfred, &c.

[From the Plymouth Journal.]

It is very gratifying to find that the mining interest in this locality not only retains its position but advances. In the district of Liskeard, the recent discovery in the 120 ft. level, of a lode in the Phoenix (late Chilcombe) Mines, estimated to be worth 60L per fm., has given great encouragement. A good discovery (lead) is also reported in Beddardown, and the mines, as a whole, are looking well, and there is an active enquiry for mining property. In our own district we have nothing very new to report, except that Sir Ralph Lopes, having permanently lowered the dues on Wheal Franco to an 18th, and granted the Wheal Massy sett to the spirited adventurers in that undertaking, operations will there be resumed with spirit, the shafts sank, and the mine more fully explored. The liberal example of Sir Ralph was, we understand, followed by Mr. R. Spy. The Wheal Anderton adventurers have determined on prosecuting their mine for three months longer, and have made a call of 1L per share for that purpose. It was, we understand, suggested that this sett should be worked in conjunction with the Tavistock Consols, and both companies remodelled, thus holding out a sufficient inducement to the united companies to drive cross-cuts from the engine to intersect the five large lodes seen in the Tavistock Consols (late Wheal Ash, &c.) sets, at a depth of upwards of 100 fms. from the surface, and thus out of the two concerns making one of the greatest undertakings in the west. The lode lately discovered on the land of William Wynnors, Esq., at Elbridge, near Cargoll, and which, we understand, is to be called Wheal Jane, destined to attract general attention amongst miners, and improve as it gets down into settled ground; it is a master lode, about 48 feet wide, and the walls very clear and distinct. Large rocks of lead, very rich in silver, are being constantly brought up, which are broken 6 fms. under the surface. Wheal Russel continues to improve, and bids fair to be a good mine. The West Bedford United, which includes the Gunnels Lake sett, and the western part of Bedford United, is to be set at work, and shares are in request. At Hawkmoor the engine-shaft is 10 fms. under the adit level (the 20), and the lode is very good, producing about 1 ton of ore of excellent quality per fm. The 30 fm. level will lay open a large extent of tributary ground. The Messrs. Carew, who are, we understand, the principal holders in this mine, have conducted it with much spirit, and we rejoice to see their labour crowned with success. Wheal Providence, in South Sydenham, has been resumed, and a very fine course of lead cut in the adit level, worth 50L per fm. The adit has been extended nearly 270 fms. on a small lode, parallel to that just cut, so that this mine will be open at a nominal cost. The engine-shaft has been sunk 30 fms. under the adit, but this lode has not been cut, nor will it, as far as we are aware, be known. The eastern part of Plymouth Wheal Yeoland continues to be the most promising and most productive. Preparation is making for opening Wheal Gennys, and the mine on Castle Farm. With the increased activity which at this moment pervades the mining world, we are happy to observe more of caution and business-like habit, and we trust to hope and believe that there will not be again such extravagant surface expenditure as in by-gone days.

TAVISTOCK CONSOLS.—We have for the last fortnight, for the purpose of expedition driven the adit by the side of the lode, the ground being much softer than the lode which has been cut through, and is composed of sand, spar, and pebbles, and is letting down a very large stream of water—it is a very kindly lode.

WHEAL FRANCO.—

The lode in the rise in the back of the 62 fm. level is producing good stones of ore, but is not so good as when we commenced rising from the back of the level, which clearly indicates that we should go deeper. The lode in the 62 fm. level, west of the shaft, is at present disorderly by a cross-course; the hole made flat up against the cross-course, and was very promising in character, which leads us to expect it to be of a like character on the other side. The lode in the wings in the bottom of the 47 fm. level is much of the same character as the lodes in the rise in the back of the 62 fm. level; we expect to communicate the wings with the rise in three weeks, when the backs will be let on tribute. The pitches are, on the whole, looking much as they have done.

PLYMOUTH WHEAL YEOLAND.—We have commenced driving the 32 fm. level east and west of the engine-shaft, but have not done enough to be able to give an opinion as to the appearances at this point. The lode in the 20 fm. level east has improved lately, and the slopes in the back of this level are producing fair work. The new pitch in the bottom of the 20 fm. level, west of this shaft, is also producing tolerable good work.

WHEAL PROVIDENCE (SOUTH SYDENHAM).—Operations are to be recommenced immediately—the prospects are most encouraging. The ore assayed by Mr. J. Hitchens, of Tavistock, produced 15L in 20 fm. lead, and 8L ozs. of silver in the ton of ore.

New Patents.

[From the Mechanics' Magazine of this day.]

SPECIFICATIONS ENROLLED DURING THE PAST WEEK.

SIR JOHN MACNEIL, Knight, Dublin, and T. BARRY, Lyons, near Dublin, mechanic: For improvements in locomotive engines, and in the construction of railways. These improvements embrace—1. A mode of constructing and working the slide valves of locomotive steam-engines by means of two eccentrics, instead of four, as has hitherto been usual. And—2. A mode of constructing iron sleepers, which are united by flexible (malleable iron) cross-bars, and rest upon cast-iron plates bolted to rigid cross-bars. The under faces of the sleepers, and the top surfaces of the cast-iron plates, are furnished with grooves and feathers, to keep the rail to the required gauge.

CLASMA.—The construction and mode of working the slide valves of locomotive steam-engines by two eccentrics instead of four.—2. The construction of iron sleepers combined with flexible cross-bars, which possess the advantages of longitudinal and cross sleepers, and prevent oscillation of the engine, by allowing the rail to assume the inclination adapted to the tread of the wheel.

J. M. HEATH, gentleman, Hanwell, Middlesex: For improvements in the manufacture of steel. The improvements embraced under this patent consist in subjecting iron, in a granular state, obtained by the cementation or decarbonising of ores (by preference magnetic ores) to a welding heat, in combination with manganese and carbon. The iron is afterwards made into bloom, then into bars or slabs, which are subsequently converted in the usual way. The proportions given by the patentee are—1 to 3 lbs. of oxide or chloride of manganese, and 1 to 2 gallons of coal tar, or other hydro-carbon, to every 100 lbs. of iron.

Clasma.—Subjecting iron, in a granular state, to a welding heat, when combined with manganese and carbon; which iron is afterwards to be made into bars or slabs, or other suitable form, and converted.

J. HOSKING, Newcastle-upon-Tyne, engineer: For an improved pavement. The patentee describes and claims:—The constructing a pavement of blocks of wood, either alone, or combined with tiles or blocks of any other suitable substance, which are perforated with longitudinal and transverse holes for the purpose of drainage. The blocks of wood, or portions of them, are made with teeth, which project above the general surface of the pavement, so as to form a number of interstices, which are filled with broken stones, asphaltum, or other substance employed for pavement, in such manner as to form the bearing surface of the road. The patentee states that a pavement constructed according to his invention will last much longer than ordinary ones, inasmuch as the wooden teeth will prevent the grinding action of the stones under pressure; and that it also causes less noise than the ordinary stone pavement.

LIST OF PATENTS GRANTED DURING THE PAST WEEK.

T. Richards, W. Taylor, and J. Wyld, the younger, of Falcon Works, Walworth, Surrey, cotton manufacturers, for improved rollers to be used in the manufacture of silk, cotton, woollen, and other fabrics.

W. E. STALDER, gentleman, of Throgmorton-street, London, for improvements in pipes for smoking, and in apparatus connected therewith.

W. McNaught, of Rochdale, Lancashire, engineer, for certain improvements in steam-engines, and also improvements in apparatus for ascertaining and registering the power of the engine.

J. Fowler, jun., of Melksham, Wilts, engineer, for improvements in draining land.

W. B. Stones, of Golden-square, Middlesex, Manchester, warehouseman, for improvements in treating peat and other carbonaceous and ligneous matters, so as to obtain products therefrom. (Being a communication.)

W. Brown, of Airdrie, Lancashire, electrician, and W. Williams, the younger, of St. Dennis, Cornwall, gentleman, for improvements in electric and magnetic apparatus for indicating and communicating intelligence.

H. J. Towing, of Bayswater, Middlesex, commission agent, for improvements in the manufacture of fuel and manure, and deodorising and disinfecting materials.

W. Church, of Birmingham, engineer, for certain improvements in machinery or apparatus to be employed in manufacturing cards and other articles composed wholly or in part of paper or pasteboard, part or parts of the said machinery being adapted to print the same, and parts to other purposes where pressure is required.

K. A. Broome, of the firm of Messrs. J. C. Robertson, and co., of Fleet-street, patent agents, for improvements in types, stereotype plates, and other figured surfaces for printing from. (Being a communication.)

R. Carte, of Southampton-street, Strand, Middlesex, professor of music, for improvements in the musical instruments designated flutes, clarionets, hautboys, and bassoons.

J. Taylor, of Manchester, mechanical designer, and R. Hurst, of Rochdale, in the same occupation, for certain improvements in, and applicable to looms for weaving, and in machinery or apparatus for preparing, tailoring, and winding wares or yarns.

Gerard John De Witte, of Brook-street, Westminster, Middlesex, gentleman, for improvements in machinery, apparatus, metallic and other substances, for the purposes of letter-press and other printing. (Being a communication.)

J. T. Tebby, of Hackney, Middlesex, civil engineer, for an improved meter for registering the flow of water and other fluids.

F. Rosenberg, Esq., of Albemarle-street, Middlesex, and C. Montgomery, of the Army and Navy Club, St. James's-square, Middlesex, for improvements in sawing, cutting, boring, and shaping wood.

DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

B. W. Winfield, Birmingham, sacking for metallic bedsteads.

N. Harris, Braunton, Northamptonshire, "The Annular Cultivator."

N. C. Fluck, Gloucester, pattern cutting machine.

Smiths and Co., Edinburgh, wick elevator.

J. Firth, Belfast, fire-bar for locomotive and other furnaces.

J. Moon, Malton, Yorkshire, chimney cap.

J. S. Willmott, Denmark-street, Bristol, phæno-pneuma, or gas carrier.

E. J. Vickery, Great Dover-road, Borough, Merino bedroll.

J. T. Woodward, Walton-on-Thames, leg and foot rest.

W. G. Barker, Old Cavendish-street, an elastic opening to be inserted in boots or shoes.

W. Johnson, Farnworth, Lancashire, lubricator.

The Rev. A. S. Atchison, rector of Teigh, Flint, writing, travelling, or invalid's table.

J. Sheppard, Birmingham, pump with draught and stop-cock.

J. and C. Clark, Wolverhampton, coffee-mill.

ACCIDENTS.

Carbean Clay-works.—As Thomas Buddle was following his employ, some earth fell on him and buried him. He was taken out alive, but died of the injuries he had received.

For Consols.—As John Lord was removing some old workings from the shaft, he was caught by a rope, and drawn into the machinery. One of his arms was pulled off, an other by his body crushed to pieces.

Linkinhorne.—As W. Phillips was standing with two companions on a board placed across the shaft in the 90 fm. level, a ladderway away from the upper part of the shaft, and struck the board on which they were standing, when Phillips fell into the shaft, about 8 fms. The two others were saved by holding on by the side of the shaft. A comrade, named Richards, went down immediately, and found that deceased had fallen into the water, when he dived, and brought him up: being alive, he was brought to grass, where medical aid was in readiness; he was removed to his home, but never spoke, and died in consequence of the injuries he had received on his head in falling.

West Bromwich—Shocking Occurrence at a Colliery.—A painful instance of that disease for the safety of life and limb which is so frequently exemplified among the miners of South Staffordshire, occurred at Messrs. Tidesley and Botteley's West Hartley Colliery.

The majority of men descended the pit at the usual hour, but shortly afterwards two who were late in coming to work, got into an empty skip, which was going down for coal, to be lowered with it. They were advised to go down one at a time, and to use some tackling, to render their descent more safe, as such a skip was not fitted for being so used, but both these recommendations they disregarded. When they had got about half way down the shaft, the iron bow of the skip snapped asunder, and it fell to the bottom, by which one of the men was immediately killed, and the other much injured.</

NOTICES TO CORRESPONDENTS.

* We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses—not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.

"J. E." (St. Albans).—Send the specification of Mr. Obed Blake, of the Thames Plate Glass Company, for improvements in ventilation, as published in the *Mining Journal* of July 28. Information as to cost and method of procuring patents can be obtained of Messrs. F. W. Campion and Co., the Patent Office, 210, Strand, who will forward an official circular.

The DEVON GREAT CONSOLS.—*Ergastum*.—In Mr. Murchison's descriptive paper, in last week's *Journal*, 3d column, 9th line from top, for "tritulators," read "intwirkmen."

FLUCTUATIONS AND MISREPRESENTATION IN MINING PROPERTY.—SIR: Under the head of "Notices to Correspondents" in last week's *Journal*, you make certain observations relative to the fluctuation and misrepresentation of mining property, and particularly instance the case of the Harmony and Montague Mines; in terms that might be prejudicial to the future working of these mines. It is true that a large sum of money was raised for the working of these mines, and great expectations held out of success in the year 1835 & 1836, and that the result was unfavourable. But the question should be, was that result fairly to be attributed to the want of success in the management? It will hardly be credited that a sum of £1,000,000, was expended upon the workings, aided, too, by the discovery of several valuable bunches of ore, and that the mines were actually not sunk an additional f.m. in depth, the whole of the cost having been expended in the upper levels. The mines at the present moment are only down to the 90.—A CONSTANT READER: Tonbridge, March 5.

"A Reader" (Beverley).—We know nothing of the Anglo-California Gold Mining and Dredging Company, or of the parties concerned—apply to some respectable mine agent.

"A. G." (Dundee).—See an article on Parsey's Compressed Air Locomotives in this day's *Journal*. A detailed description of the invention has already been given.

"J. A. H." (Gateshead).—The communication shall appear next week—when the request of "W. Y." (Bank-buildings) will also be attended to.

"M." (Lynn).—Apply to Mr. J. Sims, engineer, Tavistock, who has just made some important improvements in the domestic cooking stove—so that it may be more quickly and readily heated and kept ready for use, besides effecting a considerable saving in fuel—which, we understand, is very highly spoken of.

A description of the Wind Machine for Mines appeared in the *Mining Journal* of the 22d September, 1849.

"An Old Subscriber" (Lancaster).—There are several recipes for blue ink; the following has been recommended:—Aleppo galli bruised, 9 lbs.; green vitriol, 14 ounces; powdered gum-arabic, 10 ounces; bruised indigo, 6 ounces; soft water, 2½ gallons. The gall and indigo are to be boiled until the water is reduced to 2 gallons, then add the remaining articles; put the whole into a convenient vessel, stirring it several times during the day for 14 or 15 days—then strain it, and it will be fit for use.

"An Enquirer" (Broad-street).—The gold mines of Yaqnil, in Chili, are worked by Americans. The pay of the miners is about \$25. per month. The ore dressing is thus described by an eye-witness:—When the ore is brought to the mill, it is ground into an impalpable powder: the process of washing removes all the lighter particles, and amalgamation finally secures all the gold-dust. The washing, when described, sounds a very simple process, but it is beautiful to see how the exact adaptation of the current of water to the specific gravity of gold so easily separates the powdered matrix from the metal. The mud which passes from the mills is collected into pools, where it subsides, and every now and then is cleared out, and thrown into a common heap. A great deal of chemical action then commences; salts of various kinds effloresce on the surface, and the mass becomes hard. After having been left for a year or two, and then reashed, it yields gold, and this process may be repeated even six or seven times, but the gold each time becomes less in quantity, and the intervals required (as the inhabitants say, to generate the metal) are longer. There can be no doubt that the chemical action already mentioned each time liberates fresh gold from some combination. The discovery of a method to effect this before the first grinding would, without doubt, raise the value of the gold ores many fold. It is curious to find how minute particles of gold being scattered about, and not corroding, at last accumulate in some quantities. An instance of this is related: some of the miners being out of work, obtained permission to scrape the ground round the house and mill. They washed the earth thus got together, and procured \$30 worth of gold. This is an exact counterpart of what takes place in nature. Mountains suffer degradation, and wear away, and with them the metallic veins which they contain. The hardest rock is worn into impalpable mud, the ordinary metals oxidise, and both are removed; but gold, platinum, and a few others, are nearly indestructible, and, from their weight, sinking to the bottom, are left behind. After whole mountains have passed through this grinding mill, and have been washed by the hand of Nature, the residue becomes metalliferous, and man finds it worth his while to complete the task of separation. One rule of these mines appears very harsh, but answers well for the proprietors. The only method of sealing gold is to secure pieces of the ore, and take them out as occasion may offer. Whenever the major-domo finds a lump thus hidden, its full value is stopped out of the wages of all the men; who thus, without their combine, are obliged to keep watch over each other.

"E. J. C." (Broad-street).—Wheat Alfred Mine was abandoned in 1825; at that period it was under the management of Mr. John Taylor. The present undertaking is not on such an extensive scale as the antecedent. We shall in our next be able to give some further particulars.

JAMES JOSE (Truro).—Epidotite is a combination of silica, alumina, protoxide of iron, and lime: it is found granular, massive, and in prismatic crystals, variously terminated, and longitudinally striated. Its colour is green, of different shades, occasionally almost black, rarely brown or reddish. It has a shining lustre, and is somewhat transparent. Its primary crystal is a right oblique angled prism, of about 11° 30' and 64° 30'. It cleaves with brilliant surfaces, parallel to the sides and lesser diagonal of the prism. Before the blow-pipe it intumesces, but does not, even by a strong heat, completely melt. With borax it intumesces, and then fuses into a glass coloured by iron, unless manganese predominate, in which case it assumes in the oxidising flame an amethystine tinge. Epidote is not often found massive, but chiefly in crystals, varying in size from the acicular to near an inch in diameter, and several inches in length. The acicular are met with in the department of Isère, in France, at Bourg d'Oisans, in Dauphiné, in the Alps. The larger occur in Arendal, in Norway, and Normark, in Sweden. It belongs chiefly to primitive rocks, but is only found in veins and fissures, among which, in small quantities, it occurs in many countries. Magnetic iron, garnet, felspar, adularia, axinite, and asbestos are the minerals which chiefly accompany it. Granular epidote appears to be epidote reduced to small grains by attrition. It occurs on the banks of the River Arangoz, near Muska, in Transylvania, and is called *acora* by the inhabitants of the country. Magnesian epidote occurs in small prismatic crystals, of a violet or reddish brown colour, which are generally associated in groups, sometimes imbedded in asbestos. It is opaque, and yields to the knife; contains about 12 per cent. of the oxide of manganese, and before the blow-pipe fuses easily into a black glass, and with borax into a transparent one, exhibiting in the oxidising flame the amethystine tint of manganese. It occurs at St. Marcel, in the Valley of Aosta, in Piedmont, in gneiss, accompanied by oxide of manganese, quartz, and asbestos.

The improved colliery bow and hook, which is adapted for cranes as well as for collieries, as patented by Mr. Stephen Reed, of Newcastle-on-Tyne, can be seen at Messrs. Campion and Co.'s, Patent Office, 210, Strand.

"T. H." (Caxton).—The quotation was an error of the broker's clerk, who had altered the price of pig instead of sheet lead. It should stand thus:—Pig, 17l. 10s.; sheet 18l. 6s. to 18l. 10s.

Received.—"J. B."—T. R.—"M. J."

* It is particularly requested that all communications may be addressed—

To THE EDITOR,
Mining Journal Office,

26, FLEET-STREET, LONDON.

And Post-office orders made payable to Wm. Salmon Mansell, as acting for the proprietors

THE MINING JOURNAL

Railway and Commercial Gazette.

LONDON, MARCH 9, 1850.

The MINING JOURNAL is published at about Eleven o'clock on Saturday morning, at the office, 26, Fleet-street, and can be obtained, before Twelve, of all news-agents, at the Royal Exchange, and other parts of London.

The MINING JOURNAL of the 9th Feb. contained the titles of two motions on the timber duties, made in the House of Commons, by the hon. Member for Bodmin, Mr. WYLD, with reference to the discontinuance of the drawback on timber used in mines, and the repeal of the duty on that used in the fisheries. When the returns thus asked for are made, they will, we expect, exhibit some features not unworthy of consideration. The door was, by these motions, placed ajar. The shipowners, through Mr. MITCHELL, by his motion of Tuesday night for a committee, have thrown it wide open; and the question must now undergo full discussion within a fortnight. Mr. MITCHELL's motion had reference only to "a remission of the duty on all wood used in shipbuilding;" a measure easily reconcilable with a principle of justice, from the moment that the repeal of the Navigation Laws placed the British shipbuilder, charged with heavy duties and freights upon his timber, in competition with the Swede or Prussian, free from those charges. Mr. WYLD took the opportunity, on Tuesday, of advertising briefly to the position of the British miner, with reference to the same question—one which the hon. gentleman discussed, at some length, in August, 1848, when the Copper and Lead Duties' Bill was before the House. And it is to be hoped, that the demand so fairly made, on behalf of the British shipbuilder, may also be extended to the British miner.

The drawback of 82 per cent. of the duty on timber used in mines was discontinued in 1842, and on what ground? Why, that the 30,000/- or 40,000/-, which had been the duty upon timber so used in mines, 82 per cent. of which was remitted in the shape of drawback, should thenceforward attach to the timber thus employed, because—what? Because, in then admitting foreign copper and other ores to be smelted in this country, duties were imposed on those ores, which constituted an ample protection to the home miner. Here we have premises and deductions both set out. In 1848, you withdraw that protection so granted to British ores in 1842, which

was then made the ground of justification for the discontinuance of the drawback on timber. But you do not then reinstate the miner in possession of the advantage of which you deprived him six years before. If the reasoning of 1842 were worth anything, the principle ought to have been applied in 1848; and the removal of the protecting duties on foreign ores should have been accompanied by the renewed remission of the duties upon timber used in mines; which, it cannot be too often repeated, is wholly and irrecoverably lost.

Such is the state of the case; and we hope that Mr. WYLD will make a bold and a determined stand, when the discussion takes place upon Mr. MITCHELL's motion; and that he will demand, on behalf of the miners of England, the restoration of the drawback upon the timber they consume, thereby relieving the Government from the charge, which would otherwise apply to them—that its withdrawal was obtained upon false pretenses. In strict justice, under the circumstances, the removal of protection upon the ores should have gone forward, *pari passu*, with the restoration of the drawback upon timber. We shall return to this subject.

Although we have had no particular occasion for some time to advert to the proceedings of the ASTURIAN MINING COMPANY, our friends who have been connected with it need be under no apprehension that we have abandoned their interests, or lost sight of the course which the management is pursuing. It is evident from a circular, the purport of which we gave in our Number of the 23d of Feb., that the new members of the direction, ycleped liquidators, are not tainted with the usual official forgetfulness of opposition principles. The liquidators being, in point of fact, the committee of investigation, have, through their chairman, adopted a resolution in favour of the forfeited shareholders, and no doubt they have well considered its tendency. They have aroused from lethargy the minds of holders of such shares who have either forgotten the very existence and name of the company, or recalled them only to anaesthetise the delusion which had ensnared them. Probably there are many of those persons to whom that appeal was addressed, who may be excited with the hope of retrieving some portion of their losses, whilst others may be bent on measures of vengeance at any price. To each of those classes severally we propose to address some cautionary observations. We do not raise any question whatever as to the justice of the position. It is very probable, that if the views of the present management be effectuated, considerable advantages may be reaped, and a proportionate indemnification realised by those who accept the terms which may, in the end, meet the justice of the case; but we deem it right to raise our voice in counsel, lest, upon such a supposition, any party be drawn into a liability which does not now attach to him. That a proprietor of forfeited shares (where the forfeiture is not collusive) can no longer be deemed a contributory under the Winding-up Act, is now distinctly settled on appeal to the VICE-CHANCELLOR, and, therefore, the grounds put forward by the committee cannot prevail as a reason for adopting their conditions. Then remains the question, whether a person who is now protected from contributing under the Court of Chancery, will use a wise discretion in investing himself of his shield, which would cover him from an unlimited contribution, and that upon the very questionable consideration of obtaining a contingent benefit, should the company be fairly reconstituted? Viewing the affair from all points, we cannot answer this in the affirmative. To those who are proprietors of existing shares, a different influence dictates the policy of struggling to resuscitate their chances, because they must be declared in any case liable as contributaries, and so far as they are concerned, it is immaterial whether their contributions be or out of the Court of Chancery, provided it be efficacious for the end proposed.

But what if the necessity of an official winding-up ultimately arrives? Then will not the forfeited shareholder, should he rejoin the company, be in an infinitely worse position than he is at present? Most decidedly he will. Lawyers' bills, managers' fees, expenses of maintaining establishments, travelling expenses, accountants' charges, proceedings here, proceedings there, issues at law, current salaries, and last, but not least, the fees of court, will eat up the corpus of the estate, together with any superfluous cash which may be, *ad interim*, required of the shareholders. Consequently, we must advise all to consider well before they adopt the alternative of reappearing in the list of shareholders, and to make the necessary enquiries for ascertaining their security. The other alternative is easy—of acquiescing in forfeitures from which many a present proprietor laments his exemption.

We shall resume the consideration of this subject in our next *Journal*.

In the last Number of this *Journal*, we endeavoured, in a leading article, as well as in another part of our columns, to direct the particular attention of our readers to the result of the recent trial in the Court of Common Pleas—the ELECTRIC TELEGRAPH COMPANY v. BRETT and LITTLE; and considering now the vast importance of the matter at issue in its more extended aspect, and the absolute necessity existing in this age of advancement for a cheap and generally available system of electro-telegraphic communication, which shall be fully capable of meeting the social, commercial, and political wants, not only of the people of these realms, but of the whole world at large, we are induced to resume the subject once more; and, after examining more carefully some few points in the recent trial, pass on to consider the present position and future prospects of this potent instrument of civilisation—this winged messenger of the mind, which modern science has summoned into being, and placed at the command of man. There can be little doubt existing in the mind of any reasonable person, who may have watched the progress of the above extraordinary trial from its commencement to its close, that the true and real object contemplated by the Electric Telegraph Company in bringing their action, was not so much the individual discomfiture of Messrs. BRETT and LITTLE as the overthrow of competition generally—not so much the recovery of heavy damages in this particular instance as the prospective realisation of enormous profits, by the extension and public ratification of a legalised monopoly, as inimical to the progress of science, as injurious to the best and truest interests of man, as any which has ever yet been favoured by legislative protection. What was the charge brought against the defendants?—that they had infringed the plaintiffs' patent. But in what did that patent consist?—in the transmission of intelligence from place to place by causing electricity to operate upon a certain arrangement of mechanism. This arrangement comprehended the use of six wires, stretched from station to station, and the combined action in every instrument employed of five magnetic needles, and five coils of covered wire. This might have been a very clever and ingenious mode of working 12 years ago; but who, in the name of common sense, would ever dream in these days of using anything so obsolete and expensive?—No one! The plaintiffs are well aware of this; but they are trumping up the charge of infringement as a means to an end. They want, if they can effect it, to monopolise the entire use of electricity for telegraphic purposes; but they will find this a matter of some little difficulty. The discoveries of WATSON, OERSTED, and AMPERE, the applications of SOEMMERING, RONALD, and ALEXANDER, and the numerous facts and suggestions resulting from the labours of other contributors, previous to 1837, are not the property of the Electric Telegraph Company; they are the property of the world. The charge of infringement, therefore, refers to matters of mechanical detail; and most certainly the system of working adopted by the defendants is as different, and as far superior to that of the plaintiffs, as it well can be. They dispense with needles altogether, using the more active substitute of a bent magnetic ring. They point to no letters or figures; but they hold the command of a far more extensive series of signs and symbols by employing what is now technically termed the system of counting; and, what is more, they effect all these complicated results by the aid of a single wire. "But (say the plaintiffs) lay not too great a stress upon that point; we can work with a single wire also." If this be indeed the case—as Mr. COCKBURN remarked in his able and eloquent defence—"if, at the time of completing their patent, they contemplated any such improvement as this, they were guilty of a great fraud upon the Crown and the public by withholding the information; for not a syllable of allusion to anything of the kind appears in their specification."

A rather curious circumstance occurred in Court during the progress

of the inquiry. A large-sized model of BRETT and LITTLE's invention was produced by the plaintiffs. It was manufactured for this special occasion by one of their own witnesses, and was sworn to as a correct representation of that in actual use on the Whitehaven Railway. One of the principles embodied in the plaintiffs' invention, and said to have been infringed by the defendants, was that of loading the needle, or indicator, in such a manner, that the centre of gravity should always lie below the centre of suspension, and so preserve the verticality of the needle, whenever the latter was uninfluenced by an electric current. The infringement was sought to be proved by means of the model, and most assuredly the indicator was there found to be loaded in the manner described; but after a little further sifting, and the adduction of counter-evidence, it turned out that the defendants' arrangement was in reality the very reverse of this; for they invariably placed the centre of gravity *above* the centre of suspension, and with very great advantage to the working of the instrument. Wherefore this strange deception on the plaintiffs' part?

"Ever note, Lucilius."

There are no tricks in plain and simple faith."

The truth is, the cause itself was rotten at the core, and, as is usual in such cases, abuse took the place of argument. The learned ATTORNEY-GENERAL wished it to be well understood that the various improvements specified in Mr. LITTLE's patent were not Mr. LITTLE's own invention. Nothing of the kind! He had not invented anything. He had availed himself of the confidential communications imparted to him by other people. He had gone about culling sweetness from every flower, with a view to build up the fabric of his own fortunes upon the original ideas of others. In a word, he was nothing better than a betrayer of secrets, a systematic plagiarist, an unprincipled pirate! and be it observed that this sweeping accusation rested upon the simple fact, that Mr. LITTLE had at one time been engaged by the company to superintend the construction of some of their instruments! It is a monstrous evil, that in the nineteenth century, such gross, such calumnious imputations should be brought against any man in a public court of justice, upon unsupported possibility and vague surmise. It is a matter of deep and serious regret, that in this high-minded and reforming age, and under the protective panoply of official irresponsibility, the name, character, nobility, and standing of the British bar should be thus bartered away for so much gold; for we vastly question whether the piratical turpitude of Mr. LITTLE would have been rendered so very clear and manifest, had not the learned counsel been induced to inspect it through the distorting medium of a 450 guinea fee. The LORD CHIEF JUSTICE, however, in his clear and luminous summing up, endeavoured to correct any false impression which might arise from this very salient and illogical inference; and he put it to the jury, whether during the period of the defendants' engagement, it was not just as likely that the company should have robbed Mr. LITTLE (who was evidently a clever workman, and a man of inventive capacity), as that Mr. LITTLE should have robbed the company? Altogether it appears to us that this trial is likely to be of much greater injury than benefit to the Electric Telegraph Company. For 12 long years the projectors and promoters have had it all their own way; they have made a capital harvest already, and it is now high time that the public should have a slice of this rich cake. Surely, they can have no reasonable objection to this. Mr. WHEATSTONE will never grumble: he has made some 18,000/- or 20,000/- by the matter, notwithstanding the anathemas of Mr. FINLAISON. But perhaps Mr. COOKE will grumble, for we believe he holds some sort of interest in the monopoly up to the present time. It is true that, in his ardour for science, he has given up his ordinary vocations; and it is also true that he has not yet realised by this patent much more than 100,000/-—that is to say, 54,000/- for one part of his share, and 49,500/- for another part. Any argument, therefore, in favour of protection which comes from Mr. COOKE must necessarily carry some degree of reason with it; but there are other projectors and proprietors whose justifiable claims upon the public purse are equally deserving of consideration. Truly, one would take these gentlemen for a set of insatiable cormorants, who regard the fish they have already caught as barely sufficient for one good meal. Let it not be thought that we are too severe in our strictures; we speak on public grounds alone.

The present head and prime mover of the Electric Telegraph Company is MR. RICARDO, M.P., and his views upon the general subject of monopoly were very clearly and forcibly given, on Monday last, at the meeting convened at the London Tavern, Bishopsgate-street, for the purpose of taking into consideration the large powers entrusted to railway companies—powers which practically invest them with the monopoly of the internal carrying trade. We have not sufficient space for the whole of this gentleman's speech, but we give a few extracts:—"He was chairman of the North Staffordshire Railway, but it was only to-day that he had seen the advertisement convening the present meeting, and he at once resolved to attend, and hear the arguments that might be adduced. Having listened to the observations which had been made, he was happy to say that he most cordially agreed in the object sought to be carried by the promoters of this movement; and, as he had taken some part in endeavouring to procure a proper freedom of transit in every way, he did not think it would be incompatible with his position, as chairman of a railway company, that he should desire to see justice and fair play, when it was proved that a monopoly existed in respect to the conveyance of goods by railway. In bygone times, if people felt any objection to travel by one road, they were free to go by another; but now they were compelled to adopt one mode of conveyance, and when once they encroached themselves in a carriage they were prisoners, and go they must, at whatever price the railway companies choose to charge them. In his opinion, it became the City of London to bestir themselves, to meet this extraordinary state of circumstances. To be honest with them, he did not agree with all that had been said; but he firmly believed they were adopting the right course to carry out the object they had in view. They must help themselves, or the railway companies would not help them; and it was only by a combined movement such as this, that they could exercise any influence. He was quite willing to lend his assistance to this committee in any way he could."

The company to which Mr. RICARDO belongs, has, no doubt, effected a certain amount of good by the extension of the electric telegraph in England; but, in all human probability, a vast deal more would have been accomplished, if private enterprise and ingenuity had been left unfettered. How is it in America? There the invention is worked by license under the patentees. No less than forty-five distinct lines, belonging to as many interests, are in full operation; and these embrace a total telegraphic range of upwards of 11,000 miles. The prices charged for communications are about *one-eighth* of those which are charged in England, and actually less than a sixteenth of those which are extorted on the South-Eastern line. Passing from America to the continent of Europe, we find the same system of economy operating in the transmission of telegraphic dispatches. In France, it is enacted, in the 6th article of the bill, recently presented by the MINISTER of the INTERIOR, for opening the electric telegraph to the public, that the charge for the transmission of 20 words shall be fixed at 20 centimes per myriametre (10,000 metres); from 21 to 40 words, 35 c.; from 41 to 60, 50 c.; from 61 to 80, 65 c.; from 81 to 100, 80 c. Above 100 words, the dispatches will pay, over the above rate, 2 c. per myriametre for every additional word. In connection with this subject, we may observe that the negotiations now pending with Prussia, relative to the connection of the Prussian-Austrian telegraphic line, are now so far advanced, that, if the Prussian Government consents to open the Breslau Berlin line, which may be immediately expected, a communication will be effected with the extreme telegraph station at Cologne, whereby communication can be carried on from Vienna to Paris in 24 hours. The direct telegraph communication with abroad, which has hitherto been carried on privately with Munich alone, is to be opened generally to private correspondence within a few days, and, no doubt, at equally low rates as those above-mentioned. But we have already carried our observations to some length; and we will, therefore, defer any remarks we may have to make upon the present condition and future prospects of the electric telegraph to another opportunity.

THE TIN TRADE.

(FROM A CORRESPONDENT.)

The production of tin in the county of Cornwall is well known to be of the greatest antiquity—it being mentioned by Herodotus, who lived 450 years A.C. Diphorus Siculus, who flourished a short period after, supposes the Scilly Islands to be the Cassiterides. It has not, however, been authentically ascertained whether the Phenicians and Greeks interested themselves in the management of the mines in Cornwall, or that they merely purchased and exported the tin after it was raised. The Saxons, who had no authority in Cornwall until after it was entirely conquered by Athelstan, neglected the tin mines; and it was not until after the Norman Conquest that they were prosecuted with any degree of vigour. In the reign of King John, their production was, however, so small, that the farms of Cornwall amounted to no more than 100 marks per annum. According to which valuation, the Bishop of Exeter received, in lieu of his 10th part, the sum of 6s. 4d.; while those in Devonshire amounted to 100/- yearly. At that period, our miners must have made some progress in their profession, as we find, shortly afterwards, according to Matthew Paris, that a Cornishman, who had fled to Germany on account of a murder, first discovered tin there in the year 1241, from which period the mines of Schonfeld date their origin. About this time, the mines were worked in Galicia and Portugal; but, on the expulsion of the Moors from those countries, this, as well as every other branch of industry, languished, and was ultimately totally abandoned. About the commencement of the 16th century, mention is first made of Malacca tin; but it was not imported into Europe before the middle of the 17th century. In the year 1693, in the reign of William and Mary, the Dutch, who had already imported large quantities from their East Indian possessions, wished that king to allow foreign tin to be admitted duty free into England. At this time, the price in England was 50s. per cwt. The miners immediately petitioned the Legislature, praying them not only to prohibit its entrance, but to make a law that no English tin should be bought under 30s. 10d. to 4/- per cwt. Though it was impossible for the Legislature to regulate the price, they wisely opposed the king, who wished to please his Dutch subjects; and protection was prudently retained. Under this system, the Cornish mines progressively increased; and, previous to the discovery of the copper mines, were considered the most important branch of industry in the country.

The tin mines of Banca are said to have been discovered in the year 1710-11. These are in general worked by Chinese. In the year 1776 the metal was raised at the rate of five rix dollars the 125 lbs. In the year 1778, the Dutch East India Company brought into Europe 700,000 lbs., of which 100,000 lbs. were sold in Amsterdam for home consumption. The tin sold in Amsterdam between the years 1775 and 1779 amounted, in the whole, to 2,421,597 lbs. The mines of Banca produce now about 3600 tons yearly, although at some periods, when the demand has been great, the production has increased to 3500. The cost of mining and smelting is supposed to be about 40/- per ton: 800 tons of tin are annually produced in the Island of Ceylon, the cost of which averages, free on board, 48/- per ton. The cost of smelting a ton of tin in England has been calculated to be 73/- 17s. 6d.—viz.: 1/- ton of ore (say, 75lb); 12/- tons of coals, at 10s. per ton, 17s. 6d.; labour, wear and tear of furnaces, &c., 3/- A loss of 5 per cent. of the metal is said to occur in the reverberatory process—that, in the blowing-houses, is said to be 15%. These last are principally used for producing grain tin, or, as it is called by the French, *stain en larmes*, which is produced from stream tin, that from the tinstones forming block tin. The reverberatory furnaces are about 6 ft by 12 ft.; about 600 cts. of average ore will produce 350 of tin. Coal is used as a flux; wood was formerly the only fuel; in the year 1680 coal was first used. From the absence of any authentic records, it is impossible to say what the exact production of the Cornish tin mines may be. In the year 1817, 4120 tons were coined; in 1820, 2735; in 1827, 5816; in 1829, 4396; in 1834, 4180; in 1835, 3899. At the present period, it may be calculated that from 6500 to 7000 tons are annually raised; at the commencement of the last century from 1300 to 1500 tons were the average yearly returns. In the year 1750 the returns were about 2800 tons, and the next fifty years the produce varied from 2000 to 3000 tons. The price, since the commencement of the present century, has varied considerably. In the year 1800, it was 62/- per cwt., and steadily increased until the year 1806, when it realised 62. 6s. In the two subsequent years, it had a tendency to decline; but in the year 1809, the price was 62. 2s.

Owing to the war, and the blockade of the continent, from this year it further increased. In 1810 it fetched 7s. 17s. 6d., the highest amount it ever yet attained; 1811, 7s. 11s. 6d.; 1812, 6s. 8s.; 1813, 6s. 14s.; 1814, 7s. 16s. 6d.; 1815, 7s. 6s. 6d. On the termination of hostilities, it fell in the succeeding year, 1816, to 5s. 14s. 6d.; in 1819 it was 3s. 16s. 6d.; in 1822 it had again risen to 5s. 5s.: in 1825 it had fallen to 4s. 9s. 6d.; and at the commencement of the year 1830 it was sold at the rate of 3s. 13s.; in 1832, 3s. 12s. 9d.; in 1835, 4s. 11s. 6d.; in 1836, 5s. 9s. 6d.; in 1839, 4s. 8s. 6d.; in 1840, 4s. 2s.; in 1844, 3s. 13s.; in 1847, 3s. 13s.; 1848, 3s. 13s.; 1849, 4s.; while its present price, according to the last quotation, is 4s. 5s. In 1790, the quantity of British tin exported was 2910 tons; in 1800, 1782 tons; during the war the average exported was about 1000 to 1200 tons annually; in 1825, 1712 tons were exported; in 1836, only 558. The quantities of foreign tin imported were—in 1815, 325 tons, of this 195 were exported; in 1824, 319 imported, 235 exported; in 1825, 211 imported, 235 exported; in 1832, 1460 imported, 1086 exported; in 1838, 1536 imported, 1451 exported. In the year 1846, 20,306 cts. imported, 21,038 exported; in 1847, 23,307 imported, 11,471 exported; in 1848, 55,955 imported, 833 exported; in 1849, 35,645 imported, 8940 exported. The exports of tin, the produce of Great Britain, were—in 1848, the unwrought, 35,946 cts.; in 1849, 35,267. The declared value for the last four years, of unwrought tin exported, has been, in 1846, 107,456/-; in 1847, 159,466/-; in 1848, 143,058/-; in 1849, 141,577/-, making a total value of 555,584/- That declared on tin plates was—in 1846, 639,223/-; in 1847, 462,889/-; in 1848, 582,142/-; in 1849, 711,649/-, making a total value of 2,845,993/- Owing to the prohibitory duties in France and Belgium on tin plates, our manufacturers do not export so largely to those countries as they would under a system less restrictive; a great quantity of the Banca tin is used in the United States.

The countries which imported tin to England last year, was—Singapore, 136 tons; Holland, 74; Belgium, 27; Spain, 21; Peru, 18; China, 15; British India, 7; Cape of Good Hope, 1—making a total of 299 tons. The three countries to which we export the greatest quantity are Russia, France, and Turkey. Of foreign tin 4698 cts. were entered for home consumption in 1848, and 16,715 cts. for the same purpose in 1849. There can be no doubt, that was the duty on foreign tin repealed, that our tin-plate manufacturers would be able to enlarge their already enormous trade, as the quantity of unwrought metal now taken by the French and Russians is used for their own manufactures. In spite of the fiscal regulations imposed in those countries, our manufacturers are enabled to compete with them; and were those Governments to release their duties, would in a short period, by their superiority of workmanship, undersell them in their own markets. The repeal of the duty here, while it caused the ruin of our home mines, would be only of benefit to the clique of manufacturers. The gross amount of duty received in the year 1848 was 1438/-; in 1849, 4622/-, being as inconsiderable, that as an article of revenue it cannot be taken into calculation. It is so far important, that so long as this is retained, it precludes the Dutch and others from importing the metal, to the detriment of our native industry. In 1838, the Government, by abolishing the coining duty, freed the mines from a grievous impost, and it is to be hoped that they will pause before they take from them that protection which is vitally necessary to their well-being and positive existence.

The smelting trade is confined to a few houses, who generally are interested in the mines. The following is the names of the works and their several proprietors:—Caleenick, Messrs. Michell and Co.; Carordras and Treloewth, both belonging to Messrs. Daubuz; Charlestown House, Messrs. H. I. Enthoven and Sons; Angarrack and Chydour, Messrs. Bolithos; Trehellan and Milneur, Messrs. Williams, Harvey, and Co.; Tamar, Union Company, Bissou, Messrs. Tregoning and Co.

IMPROVEMENTS IN IRON FURNACES.

[Abstract of Specification of patent granted to Thomas Symes Pridesaux, of Southampton, gentleman, for improvements in puddling and other furnaces, and in steam-boilers. Patent dated 30th Aug., 1849; enrolled, 28th Feb., 1850.]

By a disclaimer, entered and enrolled the same day as this specification, the patentee cancels so much of the title of his patent as refers to steam-boilers, and thus reduces the scope of his patent to improvements in puddling and other furnaces; and these improvements he divides into two parts,

1. Improvements in puddling and mill-scrap furnaces. There is a fire-place, having a closed ash-pit beneath, then a bridge, which is hollow; beyond which is the puddling-furnace, or chamber; at the end of which is another bridge, also hollow; beyond which is the chimney of the furnace. At this end of the furnace is an air-pipe, which conveys air to certain passages, formed around the furnace, and through the bridges, by which means the air is conveyed to a chamber, beneath the plate of the puddling chamber, or furnace. The air cooling down this plate, and receiving heat, passes in a heated state to the closed ash-pit to supply the fire.

2. Improvements in iron smelting-furnaces. There is a fire-place, then a crucible, and then a smelting chamber, beyond which is the chimney. This furnace is to have a closed ash-pit, and air passages are to be formed in the brickwork—thus carrying heated air, which is propelled by suitable blowers, to the closed ash-pit.

Modifications of detail are described; but the above comprises the principles of this invention.

The patentee claims the supply of heated air to the closed ash-pit of the puddling or mill-scrap furnace, and the improvement in iron smelting furnaces described.

Patent-office and Designs Registry, 210, Strand, March 8.

On the Prevention of Accidents in Coal Mines.

The next witness examined before the committee, to whose evidence we now direct attention, was Mr. JOSHUA RICHARDSON, C.E., of Neath. He said he had been established about seven years in the colliery district of Wales, and had previously been a pupil to Mr. R. STEPHENSON, in the north of England, where he had colliery as well as engineering practice. Explosions do not constitute one-half of the loss of life which takes place. From the *Mining Journal*, the only data to be obtained of the number of deaths which take place in mines, it appeared, from the 1st January, 1848, to June, 1849, 798 lives had been lost—946 of which were from explosions. These returns were put in, in a tabular form, and showed that, in North and South Wales, for the year 1848, 116 deaths had occurred—in Staffordshire, 155, while in Northumberland and Durham these were only 38—7 in the former and 31 in the latter. Now, taking the number of men employed, and the quantity of coal raised, it appears that in the counties where the largest quantity is produced the fewest accidents happen. On the state of the Eaglesbush Colliery, before and after the accident of March, 1849, Mr. RICHARDSON stated that he examined the mine immediately after the explosion, at the request of the coroner's jury, accompanying Mr. WASHINGTON SMITH, the Government Inspector, on the inspection, and found the air going through the mine was at most 3000 cubic feet per minute. On examining it, after Mr. STRUVE's machine was at work, there were about 18,500 feet per minute; the candles burned clearly and well, and there were no indications of fire-damp; formerly it had been found—especially in the further part of the mine, near a fault—that it was so fiery as to be even dangerous to work with the Davy lamp, which soon got red-hot, and the men were constantly coming out to cool them; but on the occasion alluded to there was not the slightest symptom of fire-damp. The air had to be drawn a distance of 1 mile and 5 furlongs. With respect to establishing a system of Government inspection, Mr. RICHARDSON said, that he had heard many opinions expressed by colliery owners on the subject, and he thought a system might be arranged, without exciting much jealousy or objection on the part of those concerned in the management of mines. At first, perhaps, it would be expedient to do no more than report on the subject—afterwards give full powers for inspection, and also to put in operation the existing law as regards open shafts and other circumstances, with the right to examine plans; but at first he thought the coalowners would not quietly submit to very stringent measures.

E. S. BARBER, Esq., C.E., on the subject of Government inspection, gave the following evidence:—

It is a very difficult question, in consequence of the fear that parties would have lost such an office should divulge the state of the workings to rival parties in the trade. I think that a registry of all mine plans in each district ought to be made, for the purpose of preventing the tapping of water, for instance, in which many lives have been lost, from not knowing the extent of the past workings of an adjoining mine; and I think that such an officer ought to be sworn to secrecy, and that the maps ought to be submitted to him without prejudice. He should have a power, I think, of stopping the workings, in a certain direction, when they approached too near to be safe—too near to the workings of another colliery to the rise which probably might contain water. Then, again he must also see the mine without prejudice, with regard to trespasses, which are often frequent occurrence in our district; and I think that he ought to be invested with power to enter on the application of any landowner whose property adjoins, or was in proximity to any colliery or mine; for instance, the lessee of a colliery may take a large tract of any landed proprietor, and a small freeholder has, perhaps, a small property in the middle of this large property; he has no means of going down, unless he files a bill of discovery, which perhaps costs the value of his coal. I know several cases where the coal has been worked out, and the party has never had an opportunity of arriving at a knowledge of it: the late Sir Wm. Follett held that we had no power, in a case of that kind, to recover—that the statute debarred us. I think it would be much more beneficial to the district if the party were so appointed that, on the application of a landowner, he might be empowered to make a survey, and if the party complaining were in the wrong, he would have to pay the costs of the survey.

BENJAMIN GIBBONS, Esq., of Kingswinford, coalowner, stated that he had been engaged 50 years in colliery operations; had several collieries, but only one working in the Staffordshire thick coal, drawing about 100,000 tons per annum; the depth was about 140 yards. He then described the system of ventilation adopted by him, which was published in a small pamphlet in 1846, and which we noticed at the time. The principal alteration he had made was in the airways; witness said—

My air descends the shaft, travels along the working road and face of the workings, and ascends in the excavation of the coal into the air-passages, which is as near to the top of the coal as the nature of the coal will allow. In the sinking of the pit there is a channel cut out, which is bricked and separated from the shaft; the air then travels along the air-head, and comes in at the back of the shaft to the chimney. I have one 90 feet high with a fire-place, and another about 35 feet high, which may be used during very hot weather, or at times when there is a want of air, but in the winter time we scarcely or ever use it. I would just mention, that by the common means, the ascent and descent of the skips or carts, or by whatever name they may be called, in which the coal or material is drawn, are very frequently keeping the air in the upcast shaft in a state of disturbance, creating eddies in the air, and interrupting the free passage of the air; whereas, by the principle which I have adopted, this is used for the air-passage alone, and is free from all interruption, so that the current of air which descends travels into the work, ascends and discharges all the foul vapours of the mine at the top of this chimney, without ever having been disturbed at all; it is closed from the air.

This principle had been in use nearly 30 years at nearly all witness's shafts, of which he had 16 or 18. Mr. GIBBONS here read a passage from his pamphlet, to show his opinion of Government interference, as follows:—

It has often been asserted that the conveyance of goods upon railways is quite as profitable as the transmission of passengers, and this is borne out by the following calculation, made from a contract which Mr. Brassey is prepared to enter into with the directors of the Caledonian Railway, in accordance with a printed notice lately sent round to their proprietors:—

It appears, then, that the contract charge for locomotive power to draw 130 tons is 1s. 2d. per mile, and that, consequently, for 90 miles run, for instance between London and Southampton, or vice versa, the cost would be to the railway company

PARSEY'S COMPRESSED-AIR LOCOMOTIVES.

As this invention has been lost to the public for some time, we deem a brief explanation to be necessary to remove misconception, having formerly expressed our favourable opinion of its merits. A company was formed in 1846 to carry it out, and was registered to "build a large-sized engine, and to test its efficacy," and then to grant licenses for its use. The model was exhibited at No. 5, Pall Mall East, which so completely satisfied the visitors and engineers, that sufficient shares were applied for to enable the directors to give notice that no more would be issued. The office was removed to No. 85, St. James's-street, at the end of March, 1846, when it was lost to the public. In June, 1846, a meeting of the proprietors was called to receive the report of the directors, filled with the highest eulogiums of the "sense they entertained" of "the value, importance, and practicability of the invention," and recommending the capital to be reduced from 400,000/- to 12,000 guineas—the latter sum being sufficient for the limited purpose for which the company was formed; and, further, for the shareholders to take up among themselves additional shares, without again appealing to the public. As only 636 shares had been paid up, and the directors proposed to double their interest, the proprietors followed the advice, and upwards of 11,000 shares were subscribed for. The Deed of Settlement was signed in Sept., 1846; and the company was completely registered on the 2d Dec., 1846. It was agreed that the experimental engine should be built and tested "within two years from this date." A bye-experiment of Mr. Parsey's, to construct reservoirs to hold compressed air at high densities, was put in hand in Oct., 1846, but the engine defected, which occupied till Nov., 1847, to produce; but from bad workmanship, and Mr. Parsey's specified working process not being attended to, he having no control, the vessel was never fit for trial. This abortive experiment formed no part of the legitimate business of the company; but was represented and misconceived by the shareholders to be a failure of the patented locomotive, which was not attempted to be put in hand, or even contracted for. The delay having now brought the company to Nov., 1847, and the preliminary and current office and solicitor's expenses having reduced the funds, as well as the time specified for building the engine, to put a colourable feature on the representations that had been made at public meetings of the proprietors, who were anxious about an engine being built with their money, that the invention was "an utter failure;" that it was only a borrowed idea; and that they were advised that the patent was invalid, and such like insinuations, an action was brought against Mr. Parsey on a covenant in the Deed of Assignment, and the damages laid at 10,000/-

While these proceedings were going on, the proprietors, not knowing the grounds of the action, continued their indifference to the legitimate object, naturally conceiving there must be cause to justify them. Notices of trial and countermands were given by the solicitor of the company, from term to term, till Nov., 1848. As the breach of covenant (on the part of the company) to build an engine by the 2d Dec., 1846, was about to take place, a proposal for a compromise was made in Nov., and finally agreed upon at two meetings of the proprietors, called in March and April, 1849, and the terms proposed to them by the directors for their refusal or acceptance, when the arrangement was agreed to and confirmed, but was not then carried out, as a sufficient number of proprietors, under a clause in the Deed of Settlement, could not be got together to dissolve the company; so an application to the Master under the Wind-up Act was obliged to be made, to carry out the compromise with Mr. Parsey, and to dissolve the company. The terms were that the company should put an end to the action—that the defendant's law costs and compensation should be paid—that the model engine, pumps, and all other machinery, should be delivered up to Mr. Parsey, and the patents re-assigned. These conditions, we are informed, have been strictly fulfilled, and Mr. Parsey being once again proposed to submit his working machinery to the inspection and examination of all parties interested in improving and economising railway expenditure, from two to four o'clock, on Tuesdays and Fridays, at No. 455, Oxford-street. For patronage in this great undertaking, and for the speedy adoption of compressed-air power, Mr. Parsey relies on the increased comfort it will afford the public, and from the following savings:—From the locomotives not getting over-heated (as with steam), only half the number of engines now used would be necessary, and the expenses of repairs would be decimated; the durability of air-vessels compared with the destructibility of the boiler tubes, &c., of locomotives; the difference of the cost of coke on the engines, and the use of cheap coal in compressing, with many other minor items, making reductions of expenditure, independent of the comparative cost of compressing air and generating steam, which fully justifies profitable anticipations.

ON THE CONVEYANCE OF GOODS BY RAILWAY.

TO THE SHAREHOLDERS OF THE SOUTH WESTERN RAILWAY.

SIR.—It has often been asserted that the conveyance of goods upon railways is quite as profitable as the transmission of passengers, and this is borne out by the following calculation, made from a contract which Mr. Brassey is prepared to enter into with the directors of the Caledonian Railway, in accordance with a printed notice lately sent round to their proprietors:—

It appears, then, that the contract charge for locomotive power to draw 130 tons is 1s. 2d. per mile, and that, consequently, for 90 miles run, for instance between London and Southampton, or vice versa, the cost would be to the railway company

That the charge for trucks or wagons at 4d. per wagon per mile, and taking 28 wagons for the conveyance of 130 tons of merchandise, it would amount to

£16 8

Total: £16 8

At once showing that the whole cost of traction, by contract, including value of machinery, wear and tear, &c., is considerably less than 1d. per ton per mile, and at this price it is fair to presume that Mr. Brassey intends to make a profit, though to get the contract he is willing to pay the Caledonian Company no less a sum than 250,000/- for their plant, in addition to which a reduction in the contract is to take place after a run of 23,000 miles. No wonder then that the committee appointed by the shareholders (if they are aware of this fact) should recommend in their report, as far as possible, everything to be done by contract.

Taking the present enormous charge of 2d. per ton per mile for the conveyance of goods between London and Southampton, say on 130 tons, for 80 miles, would amount to

£86 13 4

Contract expenses, according to Mr. Brassey

7 3 4

Original Correspondence.

OPEN SHAFTS.

SIR.—I think that managers of mines should be reminded of their duty—for duty it is—of fencing all shafts, particularly those which are abandoned. Very many deaths have occurred from the neglect of this very trifling labour—some of them of recent date, reported in your Journal. If nothing more valuable than the life of a dog were secured by fencing a shaft, I would have it done. How much more needful, then, when the lives of men, horses, and cattle, are exposed to the danger! I think that, in some of the mine leases, there is contained a covenant, binding the grantees to fence all the shafts on their abandonment. If there is no such covenant, I think there should be, with a penalty for breach of it. In my peregrinations, I observe many such awfully dangerous pits, which circumstance has led me to write this short letter, calling upon mine managers to set a proper value on life.—R. SYMONS: *True, March 6.*

APPLICATION OF BLAST-FURNACE GASES TO USEFUL PURPOSES.

SIR.—My last letter consisted in a rapid survey of the chronological order of the different experiments on blast-furnace gases effected on the continent, and which have come within my notice. The composition of blast-furnace gases, not only at the mouth but in every part of the furnace, is a subject of the highest interest; the investigation is of a difficult nature, and the analysis of a mixture of different gases very complicated. Those who have confided to their care the management of blast-furnaces will seldom possess the requisite skill and means, and still more seldom the time, necessary to allow them to undertake investigations involving extensive chemical knowledge, and requiring for their accurate performance expensive apparatus and considerable care and attention. Yet I can affirm, from my own experience, that a knowledge of the composition of these gases is highly important in a practical point of view, and that the subject merits the attention even of those who care but little for matters of more scientific interest, but who look simply to practical results. The laws which govern the multifarious phenomena which occur in a blast-furnace are only to be ascertained by a reasoning consideration of the composition of the gases, and every one acquainted with the subject must feel how important it is that we should have an accurate idea of the nature of these laws. As practical men have but little leisure to apply to so difficult a study, they would do well to turn their attention to the labours of those who have, from disinterested motives, undertaken these laborious researches, and principally the excellent memoirs of Messrs. Bunsen, Ebelmen, Scheerer and Langberg, Bunsen and Playfair, &c., to which I strongly recommend attention. The original papers, containing a mass of useful matter relating to blast-furnaces, are to be found in *Les Annales des Mines*, *Poggendorf's Annalen*, and the *Report of the British Association*.

I now resume the subject under consideration—viz., the practical application of blast-furnace gases.

The first, and perhaps the most important consideration, is that of the mode of collecting the gases; and to this subject I shall confine myself in the present communication. The gases may be collected in several different ways:—

1. By allowing a portion of the gas to escape through several orifices in the sides of the furnace, leaving the mouth open as usual.

2. Allowing the gas to escape in the same manner; but closing the furnace-mouth in the interval between the charges.

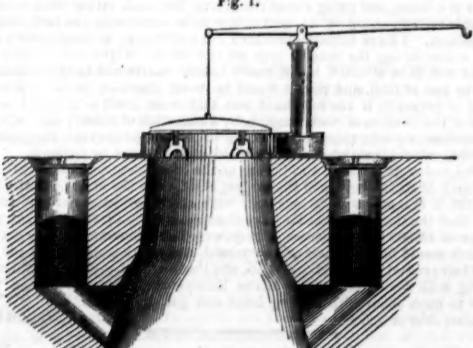
3. By plunging in the furnace, to the depth of 6 or 7 feet, a wrought or cast-iron cylinder, called a "tremie," which is of a diameter smaller than that of the furnace, and open at both ends, thereby allowing a portion of the gas to ascend into the annular space between it and the furnace, whence it is conveyed away by one or more orifices—this system, like the previous one, may be used, either with an open mouth, or with one closed by a wrought-iron cover in the intervals between the charges.

And, lastly, the gases are collected in the chimney over the furnace-mouth; the charging doors and the superior orifice of the chimney being carefully closed during the intervals that the furnace is not being charged.

The first method is that adopted by M. Faber du Faur at the Wasseralfingen and New Joachimsthal, and which has since been applied to different furnaces in France and Germany, modifying M. Faber's plan to a certain extent, in placing the orifices much higher up. M. Faber placed them as low down as $\frac{1}{5}$ of the height of the furnace. This was evidently much too low; at that depth the mass of matter is in a highly incandescent state, and the gases are obviously necessary for the purpose of exerting their reductive influence on the oxide of iron: besides, they are yet highly heated, and, therefore, the loss of heat is very considerable; the gases being drawn off at a point where they are still useful, it is evident that the furnace must suffer, and an augmented consumption of fuel will be the necessary consequence. The furnaces of Wasseralfingen and Joachimsthal are about 32 feet in height; the orifices were six in number, 19 $\frac{1}{2}$ inches in height by 8 $\frac{1}{2}$ in breadth, and at about 10 feet from the top; the furnaces produced about 5 tons per diem; the gas collected was sufficient to heat the blast and a finery furnace. This method possesses the advantage of changing very little from existing circumstances; the furnace-mouth is not narrowed, and the method of charging remains unaltered; but it is evident that only a small proportion of gas can be thus withdrawn. A much larger quantity may be collected by closing the furnace-mouth by a cover; but where its diameter is considerable, the management of such bulky covers becomes inconvenient and difficult. I have seen it, however, in successful operation at some works—for example, in the furnaces of Le Pouzin, near La Voulte, on the Rhone.

The furnaces of the Le Pouzin are about 57 ft. in height, and 6 ft. 4 in. diameter at the mouth. The gas escapes through six orifices in the sides of the furnace, whence it is conveyed by an annular reservoir, or canal, in the masonry to the pipe, which carries it downwards. Surrounding the mouth, and at its surface, is an annular cast-iron reservoir, of about 4 in. in width and 8 inches in height, and filled with water. In this plunges the cylindrical border of a wrought-iron cover, moved by a lever, by means of which it can be raised and placed aside; below this cover, and fixed to the furnace, are rails, in continuation of those on the platform. The small wrought-iron wagons, used for charging the furnace, open at bottom; when the furnace is to be charged the cover is raised, and placed at bottom; the wagon, slid rapidly over the mouth, and the doors beneath being opened, the whole of its contents are immediately charged into the furnace. The rapidity with which the furnace is charged is here a point of primary importance, as when the cover is raised but little gas passes into the orifice.

Fig. 1.

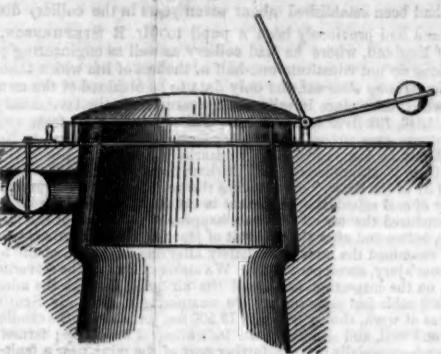


The mode of collecting the gases most generally employed, is that in which the tremie is made use of. The tremie is of cast or wrought-iron, either cylindrical, or slightly larger at bottom; its length is from 6 to 7 ft.; its diameter such that between it and the sides of the furnace is an annular space of about a foot in width. The tremie is supported by a flange, resting on a circular cast-iron plate round the furnace mouth. The gas is conveyed from the annular space by one or more openings. Cast-iron tremies are preferable to those of wrought-iron, not being so apt to burn; I have seen tremies last two or three years, while others have been burnt after nine months' use.

The combined use of the tremie and closed mouth is very frequent; this is the system adopted at the seven furnaces of the large iron-works of Le Creusot. A cylindrical cast-iron tremie plunges to the depth of 6 ft. in the furnace; the gas ascends into the annular space of about a foot in width between it and the sides of the furnace. At the mouth is an annular

reservoir, similar to that already described, into which dips the cylindrical border of a wrought-iron cover, which is turned on its axis by means of a lever and counterpoise; the pressure of the water prevents the escape of gas.

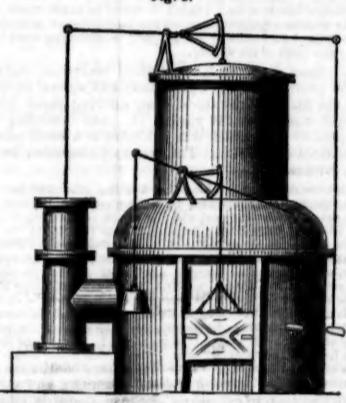
Fig. 2.



The system pursued at Givors is very similar to this, but the furnace is much smaller; the diameter at the mouth not being greater than 4 ft., instead of a cover raised by a lever, a cast-iron sliding cover is used, and the furnace is charged as at Le Pouzin. The gases are very completely collected at Givors, as the furnace is charged with very great rapidity; though the furnace produces but 10 tons of cast-iron per diem, yet the gas collected produces the steam for a 40-horse engine, besides heating two hot-air furnaces.

The system adopted in the large iron-works of La Voulte and Terrenoire differs essentially from those described above. Here the pipe by which the gas escapes communicates with the chimney, and is at a higher level than the charging-doors; these are closed by cast-iron sliding-doors. The superior orifice of the chimney is also closed by an iron lever, which can be raised, or lowered, at pleasure by means of a lever and counterpoise. An ingenious contrivance is used to prevent any possibility of atmospheric air finding its way into the pipes which convey the gases downwards. The counterpoise of the top cover also performs the office of a sliding valve, for cutting off the communication between the pipes, so that of necessity it occurs that when the cover at the top of the chimney is open the valve is closed; all accidents are thus prevented, as the workmen are sure to open the cover, otherwise they would risk suffocation from the deleterious gases. Here, as at Le Pouzin, it is a point of the greatest importance to charge with as little delay as possible, as no gas passes while the doors are open. Considering the economical effect obtained, this method is the most advantageous which I have seen in operation; the force which is produced by the combustion of the gases thus collected, is calculated at La Voulte to about 70-horse power per blast-furnace.

Fig. 3.



The use of blast-furnace gases is universal in France. I have seen the successful working at Le Creusot, La Voulte, Terrenoire, Le Pouzin, Givors, &c. Different methods being employed would seem to indicate that all are open to some objection. Nowhere have I been able to ascertain that any serious explosion had taken place by the formation of detonating compounds in the conveying pipes—an accident the possible occurrence of which has been considered by some as a sufficient objection to the use of blast-furnace gases. I very much question whether it be useful to draw off the gases by a ventilator; they escape with sufficient readiness by their own pressure. I have remarked that, at a depth of 6 ft. in our furnaces, the pressure of the gas is equivalent to that of a column of 3 in. of water; there is thus always a pressure of gas within the pipes, and, therefore, no air can possibly enter. If, instead of using conveyance pipes of large diameter, into which the gas enters by its own pressure, smaller pipes and an artificial draught are used; then the risk of the air entering, and forming explosive compounds really exists, and chances of danger are incurred, which otherwise are not to be feared. I shall, in a future communication, enter into details on methods employed for applying the gases thus collected.—E. MONTEFIORE LEVI: *Ougrée, March 4.*

MANUFACTURE OF IRON.

SIR.—In one of Mr. Mushet's letters he tells me to fuse oxide of iron, and I will obtain the cinder that I term carbo-oxide, to which I replied, that I thought I should have some difficulty in fusing oxide of iron without an addition of earthy matter, in which case I should find glass; or of carbon, when I should obtain my carbo-oxide. In another letter, Mr. Mushet, referring to cinder, says this impurity, as it is called, is neither more nor less than fused oxide of iron, generated by the high temperature to which the iron is necessarily exposed. I could quote other passages, but consider these sufficient for the occasion.

I beg to observe, that the unconsumed coke in the puddling-furnace, to which reference is made, was not merely a few minute particles, but an entire coating of the fused mass, some of the particles large enough to form cubes more than an $\frac{1}{2}$ in. square; and these, floating on the surface, according to my humble judgment, would be sooner acted upon by a decarbonising influence than combined carbon, enveloped in a dense body like iron. A large proportion of the coke, or sawdust, used in the operation, fused with the oxide of iron, and formed carbo-oxide. I coined this unscientific word to express my meaning of a highly-carbonised oxide of iron—the proportion of carbon to the oxide being greater than to produce either carbonic acid, or carbonic oxide; sufficient oxide of iron thrown into this would, no doubt, disengage one or other of those gases, and leave pure iron. I think Mr. Mushet must admit that finished tin-plate iron is the nearest approach to the pure metal that is produced in the manufacture, and that this is so red-short, that a smith would have great difficulty in forming such iron into the key of a common door lock. He could only form such an article by re-forging the iron in his smithy fire, producing carbo-oxide on the surface of the metal by the joint action of the oxygen of the blast and carbon of the fuel, and working this carefully into the body of the iron. I no more calculated upon finding a spring a saturated solution of sodium, than I do of supplying blacksmiths with nothing but cinder instead of iron.

Mr. Mushet insinuates that his letter of the 19th inst. will be his last on this subject—so shall this be mine. As I have observed in a former letter, I have had no anxiety to establish a new theory; but having been led to the investigation of the properties of bar-iron, closely watching the customary mode of preparing it, and studying attentively the effect of the different operations, I arrived at the conclusion, that the present make of bar-iron is a mixture, and that some change is called for to suit the peculiar working of iron on railways—my great aim in prosecuting this discussion being to have my opinions refuted or confirmed.

My object now is to produce iron cheaply, as near as may be, in its simple pure metallic state. I have contrived some modes of treatment which would answer well in America, where labour is high, as I should dispense with refiners, puddlers, and ball furnacemen, and the operations could be most effectually carried out by the use of anthracite coal. I have also a new arrangement of furnace for smelting iron with that fuel which was,

some years since, most unjustifiably condemned by the committee of the South Wales Anthracite Association; as well as another valuable invention, in the introduction of which I have met with nothing but continued opposition. I should like much to have an opportunity of exhibiting all these on the other side of the Atlantic, if any Pennsylvania ironmaster would make me a fair and reasonable offer to go out; I calculate their value would be there duly appreciated.—T. H. LEIGHTON: *Feb. 26.*

GASES FROM THE BLAST-FURNACE.

SIR.—I beg to tender my thanks to your foreign correspondent, "T. M.", for his interesting communication. Since my late father's connection ceased with the iron-works at Seraing, near Liege, I have heard few particulars of foreign works, and have had no opportunity of visiting any. I have not seen Mr. Evan Hopkins's report as quoted—it is probably a private document; but whatever I see proceeding from this gentleman increases my respect for the solidity and variety of his attainments. In geology, especially, his cast of mind appears to supply a desideratum. There is no lack of able geological observers who record facts and maps details, and of theorists—some very theoretical indeed; but Mr. Hopkins unites in his acquirements an acute application of theory, supported by fact, to the action of geological and mineralogical phenomena, which seems to carry him far beyond what has hitherto been attained, and combining science and utility to a high degree of promise.

It is not so surprising as at first sight may appear to "T. M." that the economy of furnace gases, in common with other scientific improvements, has failed to attract so much attention in this country as abroad. The long establishment of our iron-works on a scale of magnitude, in which, as a school, those who have added to their number have been educated, creates circumstances peculiarly favourable to the perpetuation of antiquated systems. Men of business proceeding out of them have established similar works, merely as matters of business; but it is a different state of things when a people, distinguished as the Germans have been for centuries in the science of metallurgy, set about to erect new works of an important character. The habit of science then takes precedence of the habit of business; and they are at once prepared to bring these more refined resources into play to combat such difficulties as Nature may have imposed upon them. I am happy to see you have another foreign communication in reserve; and am in hopes the brief remarks of "F. C. W." may call forward important and interesting correspondence. I must be permitted to disown the invention of the word "forgacious," in my last letter to Mr. Leighton. The merit of its analogical force is not mine; my bad writing disguised the epithet "fugacious."

DAVID MUSHET.

GASES FROM THE BLAST-FURNACE.

SIR.—In reply to Mr. J. White, Abersychan Works, will he inform us what are the proper arrangements for bringing down the gases to the hot-air stoves without any chimney at all? I have no practical experience in the process; but was informed by those who had spent much time in perfecting it, that they had found the difficulty I stated. I readily credit the statement, because it consists with known principles. The account of the fan employed in Staffordshire was a further confirmation, because mechanical power would hardly have been resorted to without a difficulty to overcome. Information as to the "proper arrangement," by which both the high chimney and the mechanical outlay can be avoided, will prove a great accession to the valuable facts you are collecting. A detail of the best methods of heating the boilers during the interval of stoppages, and which must be done before any gas is produced to continue the heat, will be an important addition.—DAVID MUSHET: *March 5.*

PATENT LAW.

SIR.—Though I agree with your remarks on the hardship experienced by the plaintiff in the cause, *Hutchison v. Teychenne*, it is yet, I think, important not to rest too much in complaints on the slowness of the legal redress, but to examine deeper into the root and causes of this evil. These appear to present two essential features. First, the uncertainty which attaches inevitably to newly-created rights; and, next, a very lax tone of morality which certainly prevails respecting these rights. It is quite true that new inventions, or new applications of the gifts of creation, may, in the first instance, be regarded as a sort of *ferae naturae*—an unclaimed property, open to the skill and dexterity of whoever may first succeed in appropriating them; but this indefinite title ceases the moment they have been appropriated. It is unjustifiable to carry uncertainty one point beyond this limit; but, unfortunately, the nicety of the boundary affords men of doubtful honesty a plausible ground and pretext for fraud and litigation. Without question, the man who encloses and reclaims a waste hitherto unowned, has as strict a title to the results of his own labour as if the land had been transmitted through centuries, secured by deeds and long occupation; but to men without that high tone of character, which it is extraordinary that any one can bear to be deficient in, this fact of late possession offers a temptation to success in disturbing and defeating the ownership; whereas, in the other case, the dreams of truculence are met by a complete sedative, there is indeed nothing to suggest them. As patent rights are investigated before the same tribunals which defend the rights of other property, it is plain the odium attaching to patent suits must be due much more to the nature of that property than to the institutions for protecting it. Dishonesty respecting patent right seems to be very much classed in the general opinion with frauds on the revenue, or the encouragement of smuggling or poaching. A man of true principle will disown either. Where there is a law existing, no one who respects himself, or his rights and duties as a citizen, will ever patronise or sanction the remotest evasion of that law, scattering as it does know not where, nor to what degree, the elements of future crime. But we do unhappily know that multitudes of persons, reputedly honest and respectable, hold very doubtful opinions and practice on these points. We only become fully aware how much the desire of gain confounds men's understanding, and how widely these seeds of corruption are spread beneath the surface of society, when some propitious occasion—such as the late railway mania—stimulates them to shoot forth into blossoms and fruit. It is a matter certainly of deep regret that law can be so powerfully wielded by the dishonest for delaying and defrauding justice; but this evil must not be too peculiarly attached to patent law. A dishonest partner may involve an honest man in years of expensive litigation, and bring him to absolute ruin, or the brink of it; while the very protections which are established to sift his claims and do him justice, protact the period of attaining it; but these are the ills which flesh is heir to. A reform in law has always proved the most difficult of tasks. The administrators of justice in this country are, perhaps, as pure and upright a body as ever were intrusted with that sacred office. Still they are men, and, as such, must differ in opinion; and that opinion will be less variable and more correct in proportion as they are conversant with the subject they have to decide upon; hence the occasional strangeness of decisions upon new inventions. The evil, therefore, seems to reside more in the subject than the means of justice; and, further, the prosecutor of a right has to take his chances of the character and talent of the subordinates, who are intrusted to enforce it upon one side, and to frustrate it on the other. We all know how difficult it is to assert a nice point of truth in the face of clamorous fraud and falsehood; and I must confess I have as yet seen no proposal for amending the administration of patent law that carries with it any assurance it will attain that end. Late reforms upon legal matters are not encouraging. Let us rather hope to see public and private opinion bearing in a more decided and emphatic manner upon the value of these rights, so that litigation shall not be needed—a noble and patriotic spirit, recognising such claims in their full force. If we consider that a tract of land, acquired centuries ago, by rapine or by justifiable bravery, by treachery or parasitism, or as the due reward of merit, is handed to its owner in perpetuity, we ought to think that a title for 14 years is a very brief reward for that enterprise which is as peculiarly the spirit of this age as a different kind of enterprise was necessarily the spirit of ages past. I am convinced that, were even a more proportionate term of property given to patent inventors, investing them with greater solidity and magnitude, it would prove a national benefit, by enhancing genius and stimulating its efforts, and discouraging that greedy and disreputable spirit, which, under the cry of "public good," hurries to inflict private wrong, and cannot rest till it throws down the barriers of a man's property, to riot in his fruits.

Let us hope that one effect of the magnificent exhibition which is approaching, may be to foster just and honourable notions on this important subject—that it may tend to cultivate a generous emulation, not in appropriating the ideas of others to our own benefit, but in respecting them—that, in place of desiring selfishly to use unacknowledged that which is another's, we may be more eager in applauding and rewarding merit, and feel, like intellectual beings, that in these efforts of mind there is

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quite as just and authoritative a property as in mines, or houses, or lands; nay, that the very uncertainty of the title, instead of being an occasion for fraud, ought more emphatically to refine and elevate our care and appreciation of the claims of right and wrong. This is absolutely required for our national character; it can only be from the existence of the habit of a deficient and unworthy mode of thought upon such questions that we hear so often of such cases as that recorded by Mr. Leighton in your Journal of Saturday last.—DAVID MUSHET. Feb. 26.

THE PATENT LAWS AND TREATIES OF COMMERCE.

Sir,—As the *Mining Journal* is a staunch advocate for the rights of inventors, although an upholder of the interests of capitalists and manufacturers, upon the true doctrine that the real interests of the one will always conflict with the real interests of the other, I was somewhat surprised to see, in the Journal of Feb. 16, under the title of "Treaties of Commerce and the Patent Laws," a proposition to the effect, that the system of granting patents for a temporary property in inventions, is antagonistic to the commercial progress of the nation, and, therefore, ought to be swept away, and some other method of rewarding inventors substituted in its place—viz.: by the grant of a pecuniary compensation to the inventor, awarded by a Government commission!

I think it may be allowed to place my experience, derived from an intercourse with inventors and patentees of more than 10 years' duration, in opposition to the "opinion, that the mode of remunerating inventors by patent is not beneficial to the public at the present day," although it be supported by many practical men; and this experience teaches me that the majority of persons would not find the same inducement to devise and invent, if after the toil and anxiety of a protracted period, and, perhaps, after an outlay of a considerable sum, they might either enjoy the profits of their discoveries so long as they could keep them secret; or, if this could not be, they were to look to such a sum as might be apportioned to them by the judgment of the Government commission as their reward.

Why, Sir, every man who knows anything of public business, must know that a Government commission frequently resolves itself into a mere *coterie*, in which jobbery and all bureaucratic vices have full swing; and, this being known, who would feel sufficient confidence in such a body to place the labours of years in their hands, and entirely at their disposal? But, supposing that we have drawn so near the millennium, that Government commissions are no longer corrupt, where shall we find a body of men who will conjoin with the strictest integrity and freedom from all prejudices the requisite knowledge and judgment necessary to become equitable arbiters of the value of the mental labour and skill of others, and who shall be nominated as qualified, by wisdom and worth, to select and appoint these arbiters of inventive genius? And last, but not least, who is to pay the piper? If inventors are to be rewarded on a scale commensurate with the justice of their claims, it will require a considerable sum annually to be added to the budget of the Chancellor of the Exchequer; and I imagine these are not the days for such unpalatable additions.

I take it, that no practical man will deny that inventions are beneficial—nay, even necessary—to the progress of the arts and manufactures; and, therefore, that any measures which would check the progress of invention, must retard the progress of the arts. All that I have stated above proceeds upon these premises.

As regards the policy of granting patent rights in Great Britain for that which is already known abroad, I will say nothing; it might, or it might not, be as well to require, like the law of the United States, that the invention be original as against all the world.

I trust, Sir, that you will give these arguments of mine fair play. I only desire to prevent a system being propounded which might be of injury to inventors and the public. Although I am a patent agent, I do not conceive that a change, such as that recommended, would affect my interests; and it will not be fair to consider the fact of my position in connection with my arguments.

I am glad to see that Mr. Lowe has escaped from the fangs of *sci. fa.*; and I think your remarks, in last week's Journal, deserve every attention. Inventors may now fairly cheer each other with the hope of a "good time coming."—F. W. CAMPIN: 210, Strand, Feb. 20.

IMPROVEMENTS IN THE PUDDLING-FURNACE.

Sir,—"A Constant Reader" has furnished us with a difference, more apparent than real, between the Dowlais and Mr. Plant's patents in the use of steam in the puddling-furnace. The only difference I can see, is that the Dowlais partook more of the nature of Mr. B. Thompson's improved method of making pig-iron by draught, by the means of a powerful chimney, and a space left around the steam pipes to admit air, which could be increased or diminished at pleasure, and Mr. Plant's by the old method—*injection*, or blast. With respect to the capabilities of the furnaces, "A Constant Reader" is in error. There was a perfect command over the heat, so that a furnace would work at heat one-third more than ordinary furnaces, either of pig or plate-iron. The question then occurs, why did Dowlais and Blaina give it up? I have inquired repeatedly; but never could obtain a satisfactory answer. It is certainly more applicable to grey iron than white.—THOMAS JONES: *Llynwri Iron-Works*, March 7.

THE AMERICO-EUROPEAN TELEGRAPH.

Sir,—Fifteen months ago I proposed the construction of an electric telegraph, connecting Europe and America, and was laughed at for it, except by a few. About a month afterwards, intelligence was received from America that a similar proposition had been laid before Congress, which was also treated with equal ridicule in both countries. The novelty of the idea having now, however, passed away, the project seems to be contemplated in a more rational manner, and the possibility of carrying it into execution, of which there cannot be the least doubt, appears to be entertained, even by a large portion of those who first derided it.

The *Mining Journal* of the 2d instant contains an account, quoted from the *New York Journal of Commerce*, of the method in which Mr. Wilkins proposes to lay the wire, which materially differs from my plan. As to the points at which the telegraph should impinge upon the two countries, Newfoundland and Ireland seem to be objectionable; for the wire may be damaged by the breaking up of the winter in the former place, and so unsettled a country as Ireland could not, with safety, be trusted with so valuable and important an instrument in its charge—that is, at least, as far as the south and west is concerned; for in some moments of frenzy the whole of the works might be destroyed, and the wire cast loose. For these reasons, it would be more desirable that the British end of the telegraph should be stationed at the most eligible spot in Cornwall, or Devonshire, and the American sufficiently south to secure it from damage by ice.

What appears at first sight to be the most formidable difficulties are the depth of the ocean and the length of the wire, which would break under its own weight unless it rested on the bed of the sea; and even thus it might be severely strained where extended over submarine valleys, should any such exist on the line in the Atlantic. I would meet these impediments by supporting the wire with pieces of cork, thickest in the centre, and bevelled regularly off towards the ends, the wire passing through their centres longitudinally—the corks to be of such dimensions, and at such intervals, as to support the wire nearly to the surface. By this means the wire will always remain at a regular depth, and, except in very shallow places, never touch the bottom. By the adoption of this plan, the above difficulties may be overcome; the partial floating of the wire will render the depth of no consequence, since each cork supports a proper share of the weight. For instance, suppose each cork to be of sufficient size to float a yard of wire prepared with gutta percha, and other insulating or protecting materials, and the corks placed a yard apart, the strain would be nothing; the wire would, in fact, float. By reducing the size of the corks, the weight of the wire would cause them to sink to a certain depth, which can be regulated by the reduction of the dimensions of the corks. A further advantage would be gained by the diminished depth of the wire, for the greater the depth, the more powerful would be the current of pyrogen required to overcome the resistance, which increases in proportion to the depth, owing to the current passing downward through a comparatively negative medium. The currents of the Atlantic are not likely to prove injurious to the wire; for, being round, and of small size, the water will have little purchase upon it, and the gulf stream is even in a favourable direction. I have heard the objection made, that the violent motion of the water during a storm might break the wire; but it is well known that the waves do not descend to any considerable depth, except in the form of a long swell, which the flexibility of the wire will, in my opinion, readily meet.

It does not seem to be necessary to enter here upon the minute details and arrangements that would be required to bring the proposed telegraph into successful operation, and to maintain it in working order. That it

would succeed, if carried into effect, there cannot be the least doubt; and the energetic manner in which our brethren of the United States have taken it up, affords a security that we shall ere long see the project carried out, perhaps while we are yet only talking of a line between this country and France. Shall we not enter upon an honourable rivalry with them? In less than six months the telegraph might be in operation with one wire, at an expense of less than £6,000.

JOHN J. LAKE.

Ordnance Office, Portsmouth, March 6.

scribed penalties. Whether in Kent or in Durham, he maintained the same law as equally applicable to offences, however rare, or however common, those offences might be in those counties. The absurdity of such "crowners' quest law" is, however, its best refutation; and it only becomes important from its consequences.

In commenting on the proceedings of the coroner at the inquest on the Darley Main sufferers, the *Newcastle Guardian* of Feb. 3, 1849, animadverts as follows on the conduct of that functionary:

Other agents and viewers said ditto to Mr. Locke—all of them, with singular unanimity, agreeing to charge the high wind with the terrible event! One of the workmen, however, told a somewhat different story. The following is a part of James Hammond's evidence:

Coroner: Whom do you blame for the explosion? Witness: I blame both T. and G. Adderley, the underground managers.

Coroner: What for?—Witness: For letting the men work in places which were not fit to work. They were put in power to see that the men did not work in places which were not fit.

Coroner: Do you not think that the fact of their both going into these places themselves shows that they thought they were fit for the men to work in?—Witness: Yes, but it has got so bad, that it could not be fit for us to work. Some of the men would have spoken about it, but they were afraid of losing their work.

Coroner: What did you not stop out of the pit if it was in that state?—If the man had spoken out he might have said, "Because I was afraid of losing my work there, and been compelled to obtain it elsewhere," but from motives of expediency he stucked a direct answer, and replied, "Well, I have heard the men talk about it."

Here the coroner sprang upon him like an Old Bailey desperado—I cannot take as evidence anything that you have heard. Did you ever apprehend any danger?—Witness: I did.

The cross-examiner, who probably knows about as much law as the plainer, "took nothing by his motion," and after matting that it was very odd, if he thought the explosion was dangerous, that he should still go on working, asked the witness to explain the cause of the explosion.—Witness: It had been done by taking away all the coal before them, and leaving it all dead behind, so that the wind could not get down behind them.

The Coroner remembered the evidence of the viewer, and inquired if the high wind had not something to do with the accident?—"It may have had something to do with it," was the reply, "but it has been through sulphur lying in the works."

The Coroner stated that he had been in correspondence with Sir G. Grey, who was willing to send down an inspector, if the jury thought it advisable.

The jury deemed this advisable, and the inquest was adjourned.

The Newcastle Guardian continues—

We are glad this course has been taken, and only wish that we could anticipate from it beneficial results. Doubtless the presence of a competent individual, charged by the Executive Government with the important duty of watching the proceedings, will have a salutary effect on the conduct of the presiding official; we may expect to find the proceedings orderly and impartial, and henceforth devoid of the snappish and browbeating style of examination, so unbecoming the position and character of a coroner, of which we have adduced some specimens.

J. RICHARDSON, C.E.

Neath, Feb. 25.

GUTTA PERCHA.

Sir,—There are few evils in the category of ills more reprehensible, or dangerous, than the employment of leaden pipes for conveying water into public buildings or private dwellings. The case of Southampton stands out in prominent relief, as well as that at Claremont—in this country the more dangerous, seeing that the general impregnation in water is a super-carbonate of lime. I have been some times startled with the rapidity with which water becomes notably charged with lead. The mere transit of water through a leaden pipe, a few feet in length, has sufficed, and which has been readily detected by a continuous stream of sulphuretted hydrogen. The bad qualities of the water in this locality are quite enough to contend against, without being subjected to the risk of being poisoned by virulent salts of lead. I have had my leaden pipe taken up, and substituted by one of *gutta percha*; there was some difficulty in attaching it to the *main*, which, however, was eventually accomplished by a brass ferrule, &c. It has since been suggested to me that there is considerable risk that the *gutta percha* pipe may be *gnawed by rats*; but I have recommended, to meet this eventuality, that the pipe should be coated with pitch, or tar—an effective remedy against these *omnivorous* animals. J. MURRAY.

Portland-place, Hull, March 6.

SOURCE OF INFUSORIAL LIFE.

Sir,—Apart from organic matter derived from animal and vegetable sources, resulting from fermenting and decomposing materials, there is yet another and unsuspected origin of the development of infusorial life—I mean the *calcareous*, and it may be other earthy, matter dissolved in water. By a high magnifying power, I have detected the germs, or ova, of animalcula life in prepared chalk, and this dissolved in distilled water, by means of a stream of carbonic acid gas, in process of time, in a summer's sun, developed polygastric infusoria; due care, of course, was taken as to the exclusion of atmospheric air. Facts akin to these, and somewhat similar experiments, at once extinguish the sceptical notion of equivocal production, or spontaneous generation, and reveal the source of error in Mr. Cross's experiments as to insect creations, so greedily pounced upon by the atheistical author of that mass of error and gratuitous assumption—*The Vestiges of Creation*. On purifying water by Mr. Horsley's process, organic matter has been precipitated in the act of decomposition, and water thus depurated has remained in my possession unchanged for many months, perfectly soft, and as pellucid as that which rises at the source of the mountain-hill; and, for anything I can see to the contrary, may remain unchanged for many years to come. J. MURRAY.

Portland-place, Hull, March 6.

NEW APPLICATION OF STEAM-POWER IN NAVIGATION.—We have had an opportunity of examining the new application of steam-power in navigation, for which the ingenious inventors, the Messrs. Ruthven, of New-street, have secured patents both in this country and in the United States of America. The disadvantages of the paddle-wheels in steam-vessels are too well-known to require enumeration. The attention of the Messrs. Ruthven, of Edinburgh, whose names rank high as engineers, has, it seems, for a long period been directed to this subject. The result has been the discovery or application of a new method of propelling and navigating steam-vessels. The arrangement consists in the forcible expulsion of water from a nozzle or bent pipe, at each side of the vessel, which is effected by the power of the steam-engine. The form and properties of a sailing vessel are preserved, there being no projections on the hull in the form of paddle-boxes or otherwise. Under the engine, which is placed in a horizontal position, is a round iron case, in which there is a wheel, having a shaft through what is termed a stuffing-box, on the upper or outer side. The piston of the steam-engine is attached to the shaft cranks, and the steam-power is applied wholly to revolving the wheel in the iron case, which, being made something like a fan-wheel, carries the water with it in its revolutions. The water, in obedience to the laws of centrifugal motion, presses towards the outer rim of the case with a force proportionate to the speed, and escapes by an aperture and pipe at each side, whence it is discharged by the nozzle or bent pipe, into the sea. The water is supplied to the iron case by a large flat pipe, which has a free communication with the sea by means of apertures in the bottom of the vessel. The nozzle is above the water line, and can be turned by the seamen on deck with the greatest facility, so as to discharge the water either towards the bow or stern. Discharging the water a-stern, makes the vessel go a-head; when discharged towards the bow, the vessel goes a-stern; and when discharged downwards, the vessel remains stationary. These operations are effected without the engine being altered or stopped—a material improvement on the paddle-wheel; and as the elevation of one nozzle is rapidly altered independently of the other, ample facilities are given for turning the vessel. The absence of obstruction on the hull enables the vessel to use sail with as much effect as a common sailing vessel; while the steam-power may be perfectly combined with the action of the sails—an advantage denied to a steam-vessel, except to a limited extent. It is difficult to convey an adequate idea of the improvements without an inspection of the mechanism—an inspection, however, for which Messrs. Ruthven are anxious to afford every facility, having constructed a model of a vessel, 12 ft. in length, for the illustration of the improved method of propulsion.—*Edinburgh Evening Courant*.

NEW TANK LOCOMOTIVE.—A new locomotive, embracing along with the machinery of a tender, has been placed on the Newcastle and Berwick line for a trial trip: it was from the manufactory of Messrs. Hawthorn, and was the first constructed. The principal feature is that it carries its own supply of coke and water, without the necessity of a tender; which is done by two tanks, one placed under the footboard and the other under the boiler. It is also provided with a powerful break to act upon the large wheels, so that it is complete in itself. It left Newcastle for Lesbury, a distance of 33½ miles, with a train of 38 tons, exclusive of the engine, and travelled at the rate of 35 miles per hour. It consumed 12½ lbs. of coke per mile, including getting up steam previous to starting. The water evaporated was about 14 gallons per mile; but, as is always the case with new engines on their first trip, it "primed" considerably, so that the evaporation of water will be much less when the boiler is perfectly clean. The engine worked extremely steady, and was quite free from any lateral or pitching motion. The tank engine is the first of several of the same kind in the course of construction for the Edinburgh, Perth, and Dundee Railway Company, and it is intended to run with the light trains on their short branch lines. The engine carries sufficient coke for a run of 70 miles, and water for 30 miles, and is arranged to run with either end first, thereby preventing the necessity of turning the tables at the termination of the branches, which will be of considerable saving to the company, besides a saving in fuel, and first cost.—*Newcastle Courant*.

CAUTION TO COALIERS.—William Guest, a collier, has been committed to prison for three months' hard labour for leaving his work under Thomas Gold and another, at the Blue Ball Colliery, Dudley, without notice.

EASTERN COAST OF CENTRAL AMERICA COMMERCIAL AND AGRICULTURAL COMPANY.—In conformity with the resolutions passed at the meeting of Holders of Debenture Bonds, held at the London Tavern on Tuesday, the 19th ult., the committee hereby give Notice, that the TIME APPOINTED for the PAYMENT of TWO SHILLINGS and SIXPENCE per debenture, towards meeting the preliminary expenses attendant upon the procuring a renewed grant from the Guatemalan Government, will EXPIRE on Friday, the 13th of March inst., after which time the holders of Debenture Bonds not making this payment will be permanently excluded the right to participate in the benefits which may arise from the proposed proceedings. The payment is to be made to Mr. N. Lindo, 17, King's Arms'-yard, Moorgate-street, solicitor, and the debenture to be produced, when a receipt for the amount paid will be given.—March 8, 1850.

NATAL COMPANY (Provisionally Registered).—Promoter Joseph Steer Christopher, Esq., of Petermaritzburg, Natal.—A PUBLIC MEETING will be HELD on Monday, the 11th of March last, at the Albion Hotel, Aldergate-street, when the attendance of any parties taking an interest in the formation of this company is requested. In the meantime applications for prospectuses, &c., may be made to Joseph Steer Christopher, Esq., at the North and South American Coffee-house, City; to the secretary, Thomas James Basir, Esq.; or to Wathen and Phillips, solicitors to the Company, 18, Basinghall-street.—March 7, 1850.

N.B.—The chair will be taken at half-past Seven in the evening precisely.

STEVENS AND SON, GAS ENGINEERS, IRON and BRASS FOUNDRERS, and CONTRACTORS for the ERECTION of GAS-WORKS, inclusive of APPARATUS, of every description, for the MANUFACTURE of GAS, and the FITTINGS of from 20 to 20,000 LIGHTS, whether for Public or Private use.

ESTABLISHED IN 1815.

MANUFACTURERS of STATION METERS and GOVERNORS; and CONSUMERS' GAS-METERS, of the most approved construction.

CAST-IRON MAINS SUPPLIED AND LAID FOR GAS or WATER; Street Lamp-posts, Brackets, and Bronze, Copper, Iron, or Tin Lanthorns.

TANKS and LIQUOR BACKS, of any dimensions, in Cast-iron or Galvanised Wrought-iron, constructed and erected.

THE PATENT SEMAPHORE RAILWAY SIGNALS; and RAILWAY LAMPS, for Stations, Engines, Carriages, Signalmen, &c.

ARCHITECTURAL DESIGNS CARVED in WOOD, or MODELLED in WAX or COMPOSITION, by Artists on the premises, and CAST in BRONZE, BRASS, IRON, &c.

And DRAWINGS, PLANS, and SPECIFICATIONS submitted.

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INDURATED AND IMPERVIOUS STONE, CHALK, &c.

—AGENTS, with capital, are WANTED in all TOWNS to SUPPLY (under British and Foreign Patents) the great demand for HUTCHISONISED MATERIALS—hard as granite, impervious to moisture, vermin, &c.; the cheapest and most durable for all buildings, hydraulic, paving, monumental and decorative work.—The profits are large.

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N.B.—Houses cured of damp. The produce of soft stone quarries, chalk, plaster of Paris, wood, pasteboard, and all absorbent materials indurated to resist frost, vermin, &c.

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E. J. DENT, 82, Strand; 33, Cockspur-street; 34, Royal Exchange (clock tower area), Watch and Clock Maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1836, 1840, 1842. Silver lever watches, jewelled in four holes, 6 gs. each; in gold cases, from £8 to £10 extra. Gold horizontal watches, with gold dials, from 6 gs. to 12 gs. each.

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THE PATENT OFFICE AND DESIGNS REGISTRY.

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INVENTORS will receive (gratis), on application, the OFFICIAL CIRCULAR OF INFORMATION, detailing the eligible course for PROTECTION of INVENTIONS and DESIGNS, with Reduced Scale of Fees.

Messrs. F. W. CAMPIN and CO. offer their services, and the benefit of many years experience, in SECURING PATENTS and REGISTRATIONS OF DESIGNS, with due regard to VALIDITY, economy, and dispatch—assisted by scientific men of repute.

Also, in MECHANICAL and ENGINEERING DRAWINGS, whether connected with Plants, Railways, or otherwise, by a staff of first-rate draftsmen.

Application personally, or by letter, to F. W. Campin and Co., No. 210, Strand (corner of Essex-street).

INDEPENDENT RAILWAY AUDIT.—A general meeting of the deputations, appointed at the recent railway meetings, upon the question of audit, took place at the Euston Hotel, yesterday. The meeting was strictly a private one; but we have been informed that the London and North-Western, Great Western, South-Western, Eastern Counties, Blackwall, Lancashire and Yorkshire, York, Newcastle, and Berwick, Midland, Great Northern, and some other railway companies, were represented. The draft of a bill, as put together by the committee, who have been for some time sitting on behalf of the shareholders, was considered, clause by clause, and finally agreed to. We understand that strong feeling was expressed, especially by the representatives of some of the northern companies, against any restrictive and unelastic conditions which would tie up the hands of the shareholders; and a unanimous expression of opinion against Government interference in any shape was given. The bill, as proposed, comprises not only wholesome and stringent provisions with respect to audit, but also clauses, altering to some extent the working of railway administration. We believe an adjourned meeting takes place to-day, and that the independent measure of the shareholders will then be fairly launched and given to the public.

PRICES OF MINING MATERIALS,

as charged at the STRAY PARK MINES in the following months:—

	Sept.	Oct.	Nov.	Dec.
Coal, carriage included	per ton 13s 6d.	13s 6d.	14s 0d.	14s 0d.
Timber, balk	per foot 0 10	0 10	0 10	0 9
Iron, common	per cwt. 6 0	0	0	0
Ditto, hoop	" 10 6	10 6	—	—
Steel, double converted	" —	—	—	42 0
Ditto, gad.	" —	—	—	24 6
Rope	per lb. 36 0	36 0	34 0	—
White yarn	" 0 4	—	—	—
Hemp	" 0 4	—	—	—
Chain, best	per cwt. —	20 0	—	—
Oil, rape	" per gall. —	3 0	—	—
Lead, white	per cwt. 24 6	—	—	—
Nails, 2s.	" 15 3	—	—	—
Ditto, 3s-inch	" 16 0	—	—	—
Ditto, 5s-inch	" 14 6	—	—	—
Leather	per lb. 1 2	—	—	1 2
Padlocks (with two keys)	per doz. 9 0	—	—	—
Candles, best	" 4 6	—	4 9	5 0
Powder	per 100 lbs. 38 0	38 0	38 0	38 0
Hilts	per doz. 1 4	—	—	—
Tallow	per cwt. 39 0	—	—	—
Cans	per doz. 4 0	—	—	4 0
Safety fuse	per cwt. 0 4	0 4	0 4	0 4

CORNISH STEAM-ENGINES.

[Abstract from Browne's Cornish Engine Reporter, from Jan. 21 to Feb. 20.]

PUMPING-ENGINES.	
Number reported	29
Average load per square inch on the piston, in lbs.	13 1
Average number of strokes per minute	6 1
Gallons of water drawn per minute	6022
Average duty of 17 engines—being million lbs. lifted 1 foot high, by the consumption of 1 cwt. of coals	69 1
Actual horse-power employed per minute	1173 9
Average consumption of coals per horse-power per hour, in lbs.	4 1
ROTARY-ENGINES—WHIMS.	
Number reported	26
Number of kibbles drawn	75,349
Average depth of drawing, in fathoms	135 4
Average number of horse-whim kibbles drawn the average depth, by consuming 1 cwt. of coals	54 7
Average duty of 15 engines, as above	17 6
STAMPE.	
Number reported	7
Average number of strokes per minute	13 7
Average duty of 5 engines, as above	41 3
Actual horse-power employed per minute	135 0

PUMPING-ENGINES DOING HIGHEST DUTY.

Par Consols 80-inch single . . . Millions 101 2

Great Polgoon 80-inch single . . . 91 7

Fowey Consols 80-inch single . . . 91 4

West Fowey Consols 60-inch single . . . 84 4

North Pool 60-inch single . . . 73 9

Stray Park 60-inch single . . . 73 2

Callington 50-inch single . . . 71 4

Trelawny 50-inch single . . . 71 4

WHIM-ENGINES.

22-inch double Millions 28 0

24 & 13-inch Sims's combined 27 8

22-inch double 27 2

24 & 13-inch Sims's combined 22 0

24-inch single 20 8

Devon Great Consols 30 & 16-inch Sims's combined 19 2

Great Polgoon 35-inch double . . . Millions 60 1

Lewis Mine 52 & 28-inch Sims's combined . . . 50 5

South Cadran 26-inch single . . . 49 0

STRUVE'S PATENT MINE VENTILATOR.

Cost—£150.

Quantity of air passed through a Mine almost unlimited, to the extent of 300,000 cubic feet per minute, if necessary—depending on size of apparatus.

COST of an APPARATUS to produce a ventilation of 30,000 cubic feet per minute, ONE HUNDRED and FIFTY POUNDS, exclusive of patent right. This amount of ventilation would be sufficient for a mine working 150 tons per day, provided it was not very faulty; in which case it would be desirable to provide for 30,000 cubic feet of air per minute. The capabilities of the Ventilator may be doubled at any future time, at a comparatively small cost.

The Ventilator has been at work for upwards of nine months at the Eaglesbush Colliery, near Neath, working under a rarefaction of 2*g* to 3 inches of water, which demonstrates the impracticability of furnace ventilation, when the shafts are shallow and the airways small.—It is practical to rarify a mine by this ventilator to the extent of 2 feet of water, or 2 inches of mercury.

LICENSES will be GRANTED on application to Mr. WILLIAM PRICE STRUVE, Swansea, CIVIL ENGINEER AND MINERAL SURVEYOR.

WARRANTED SAFETY FUSE.—W. BRUNTON & CO.

To COLLIERY PROPRIETORS.

Quantity of air passed through a Mine almost unlimited, to the extent of 300,000 cubic feet per minute, if necessary—depending on size of apparatus.

COST of an APPARATUS to produce a ventilation of 30,000 cubic feet per minute, ONE HUNDRED and FIFTY POUNDS, exclusive of patent right. This amount of ventilation would be sufficient for a mine working 150 tons per day, provided it was not very faulty; in which case it would be desirable to provide for 30,000 cubic feet of air per minute. The capabilities of the Ventilator may be doubled at any future time, at a comparatively small cost.

The Ventilator has been at work for upwards of nine months at the Eaglesbush Colliery, near Neath, working under a rarefaction of 2*g* to 3 inches of water, which demonstrates the impracticability of furnace ventilation, when the shafts are shallow and the airways small.—It is practical to rarify a mine by this ventilator to the extent of 2 feet of water, or 2 inches of mercury.

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